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Incentives and Policy Instruments for Promotion of Sustainable Production

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The Sustainable Consumption and Production (SCP) Policy Project – Indonesia

Incentives and Policy Instruments for Promotion of Sustainable Production

Final Report

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EXECUTIVE SUMMARY

The present report was elaborated to support the implementation of the Sustainable Consumption and Production (SCP) Policy Project – Indonesia, a project hosted by the Ministry of Environment and funded by the European Union under the SWITCH Asia Programme to Promote Sustainable Consumption and Production in Asia. The goal of the study was: "Incentives and policy instruments for the promotion of sustainable production in the Indonesian context shall be identified and examined, and public consultation shall be held to ensure broad consensus on the findings". The following types of policy instruments are covered in the present report, whereas the focus is on economic and non-economic instruments:

- Regulatory instruments, incl. norms & standards and environmental control & enforcement.
- Economic instruments, incl. environmental taxes and financing, green procurement.
- Non-economic instruments, incl. research, education, training, voluntary agreements, eco-labeling, information, reporting.

Section 2 offers an overview and practical examples of international good practice in the application of SCP policy instruments relevant to Indonesia. Strengths and weaknesses of different types of policy instruments are discussed too, underlying the importance of establishing a policy mix consisting of different types of instruments in order to achieve best results in implementing policy.

Section 3 includes a detailed review of existing and recently adopted policies that influence SCP. SCP policy instruments already introduced in Indonesia are then reviewed and assessed in section 4, including command and control instruments, several tax instruments (surface water tax; groundwater tax; municipal waste retribution; wastewater treatment retribution; gasoline tax; motor vehicle tax; motor vehicle acquisition tax; various building taxes and a duty exemption for environmental protection equipment and material), several financing instruments (industrial efficiency and pollution control scheme; pollution abatement equipment scheme; the Indonesia debt for nature swap; the Indonesia Green Investment Fund; the Indonesia Climate Change Trust Fund and various soft loan schemes operated by the Ministry of Finance and the Ministry of SMEs and Cooperatives), green public procurement, as well as various non-economic instruments (such as various Indonesian eco-labels, various Indonesian green industry awards, green building certification, environmental certification for SMEs, the PROPER environmental rating scheme, as well as a number of SCP related education & awareness schemes).

The conclusion from this review, as discussed in section 4.4, is that Indonesia has made important progress in the area of several SCP policy instruments, but many options exist to further improve and fine-tune existing instruments and incentives. Such reform potential is illustrated in graph 1 below.

At the same time numerous gaps in the existing policy framework could be identified (discussed in section 4.5), i.e. areas where new, additional SCP policy instruments could be developed.

The assessment led to 19 policy recommendations, including:

Recommendation 1:	Measures to increase compliance with law
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Recommendation 17:	Upgrade and mainstream eco-labeling
Recommendation 18:	Web-based information platform
Recommendation 19:	Further upgrade PROPER scheme

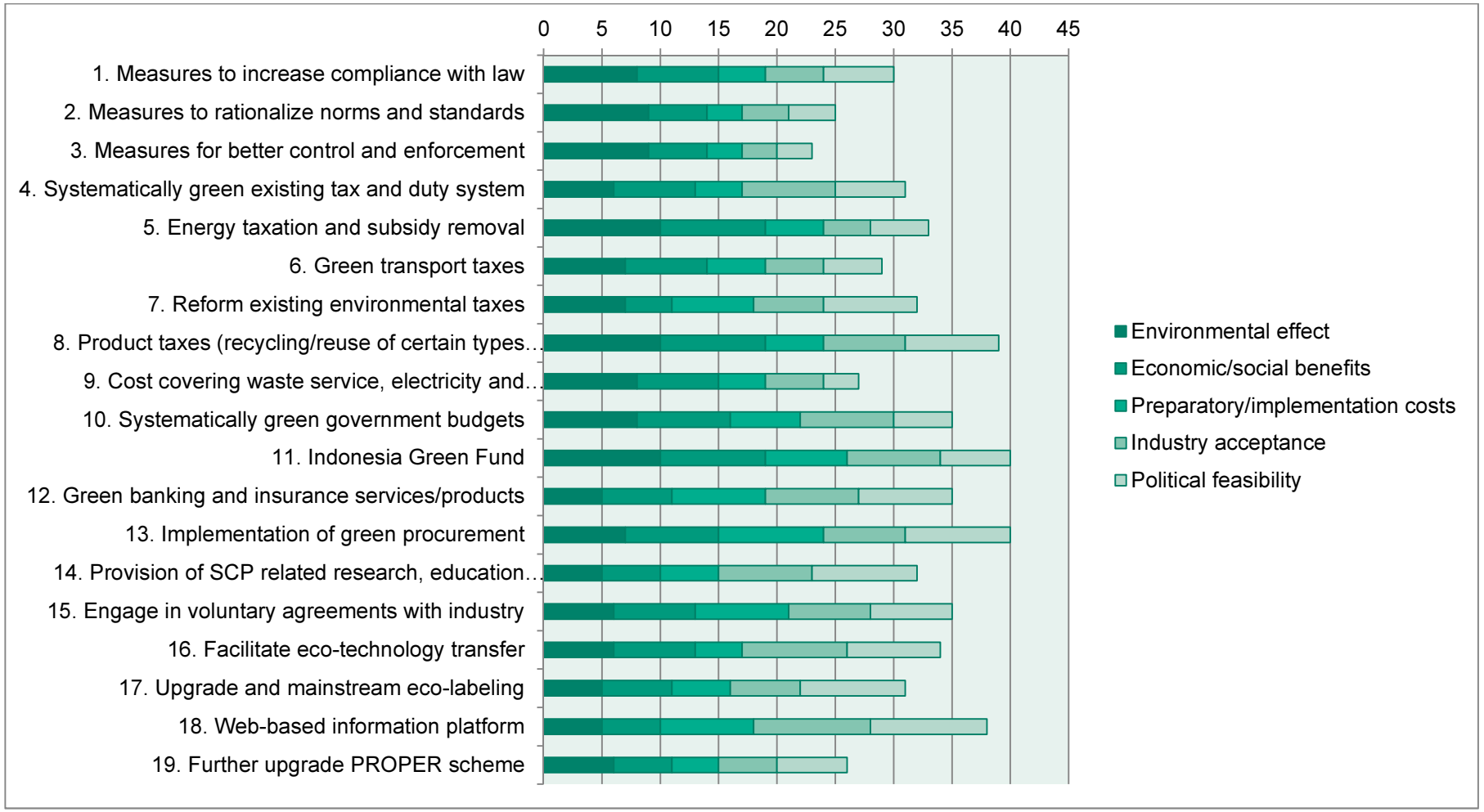
Details for each recommendation are included in section 5, including possible design and mode of operation; environmental, economic and social impacts; preparatory work needed; as well as a brief assessment of the feasibility of each recommendation (preparatory/implementation costs, industry acceptance, political feasibility). Graph 2 below depicts the authors' cumulative rating of recommendations, assuming that all criteria (environmental effect, economic/social benefits, preparatory/implementation costs, industry acceptance and political feasibility) are equally important.

Graph 1: Effectiveness and reform potential of existing SCP related economic and non-economic incentives in Indonesia

Instrument	**Environmental benefits** (emissions↓, resource use↓)	**Economic benefits** (growth↑, innovation↑)	**Social benefits** (job creation↑, occupational health↑)	**Comments**
Economic instruments				
Surface water tax	●○○○○○○○○○	●○○○○○○○○○	●○○○○○○○○○	No effective incentives for rational resource use
Groundwater tax	●○○○○○○○○○	●○○○○○○○○○	●○○○○○○○○○	Tax rates relatively low, not encouraging efficient use
Municipal Waste Retribution	●○○●○○○○○○	●○○●○○○○○○	●○○●○○○○○○	Low tariff; low staffing; small incentive for waste reduct.
Wastewater Treatment Retrib.	●○○○○○○○○○	○○○○○○○○○○	●○○○○○○○○○	Low rates with no connection to actual pollution loads
Eco-tech import tax exemption	●○○○○○○○○○	○○○○○○○○○○	○○○○○○○○○○	Procedures too complicated. Less than 10 cases p.a.
KLH-KfW IEPC soft loans	●○○●○○○○○○	●○○○○○○○○○	●○○○○○○○○○	Scheme too small/closed for major impacts nationwide.
ICCTF	●○○○○○○○○○	○○○○○○○○○○	○○○○○○○○○○	Few projects only focusing on TA, not GHG reduction
MoF soft loans, KUR, KUMK...	●○○○○○○○○○	●○○●●●●●○○	●○○●●●○○○○	No environment focus or environmental criteria
Green public procurement	●○○○○○○○○○	●○○○○○○○○○	○○○○○○○○○○	Legal basis for GPP exists, but GPP not yet practiced
Waste bank	●○○●○○○○○○	●○○●○○○○○○	●○○●○○○○○○	Nationwide impacts and recycling/reuse rates modest
Non-economic instruments				
PROPER rating system	●○○●●●○○○○	●○○○○○○○○○	●○○○○○○○○○	Widely used. Only basic performance indicators used.
KLH Eco-labels type I	●○○○○○○○○○	○○○○○○○○○○	○○○○○○○○○○	Label rarely used (paper only); little/no demand
KLH Eco-label type II	○○○○○○○○○○	○○○○○○○○○○	○○○○○○○○○○	Label not yet practiced; demand expected to high
Energy efficiency eco-label	○○○○○○○○○○	○○○○○○○○○○	○○○○○○○○○○	Label not yet practiced; demand expected to high
Green building certification	●○○○○○○○○○	●○○●●○○○○○	●○○○○○○○○○	Several buildings already certified. Scale up needed.
SME environmental certification	○○○○○○○○○○	○○○○○○○○○○	○○○○○○○○○○	Scheme in preparation, not yet implemented
Green industry award	●○○○○○○○○○	○○○○○○○○○○	○○○○○○○○○○	Voluntary program with a few dozen participants only.
Sustainable business award	●○○○○○○○○○	●○○○○○○○○○	●○○○○○○○○○	Voluntary program with a few dozen participants only.
Green hotel award	●○○●○○○○○○	●○○●○○○○○○	●○○○○○○○○○	A number of hotels certified. Scale up needed.
Private eco hotel certification	●○○●○○○○○○	●○○●○○○○○○	●○○○○○○○○○	A number of hotels certified. Scale up needed.

Note on how to read the table: Dark green circles indicate the authors' rating (opinion) of the actual, nationwide effect of an instrument on a scale of 1-10. Light green circles indicate authors' opinion on the maximum possible effect of an instrument, i.e. if it was reformed with a view to maximize positive environmental, economic and social impacts. Note that the above rating represents the authors' opinion only and is intended to demonstrate primarily the significant reform potential of different instruments. Additional details on the authors' assessment of individual instruments are included in sections 4.2 and 4.3.

Graph 2: Authors' cumulative rating of the desirability and feasibility of recommendations, assuming that all criteria (environmental effect, economic/social benefits, preparatory/implementation costs, industry acceptance and political feasibility) are equally important.



Please note that the ranking represents the authors' subjective views and should be interpreted accordingly.

ABBREVIATIONS & ACRONYMS

AusAID	Australian Agency for International Development
BAPPENAS	Ministry of National Development Planning Indonesia
BAT	Best available technology
BSN	Badan Standadisasi Nasional (National Standardization Board)
CER	certified emission reduction
CFC	Chlorofluorocarbon
CO2	Carbon dioxide
CSR	Corporate social responsibility
EC	European Commission
EEA	European Environment Agency
EECCA	Eastern Europe, Caucasus and Central Asia
EFR	Environmental Fiscal Reform
EI	economic instrument
EMAS	Eco-Management and Audit Scheme
E-PRTR	European Pollutant Release and Transfer Register
EPR	extended producer responsibility
ESC	Education for sustainable consumption
ESCO	Energy service company
ETAP	Environmental Technology Action Plan
ETR	environmental tax reform
EU	European Union
EUR	Euro (currency)
FDI	Foreign direct investment
FLEGT	Forest Law enforcement, governance and trade
FSC	Forestry Stewardship Council
GBI	Green Building Index
GCF	Green Carbon Fund
GDP	Gross Domestic Product
GHGs	Green House Gases
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (German Society for International Cooperation)
GOI	Government of Indonesia
GPP	green public procurement
GTFS	Green Technology Financing Scheme
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit GmbH (German Society for Technical Cooperation)
ICCTF	Indonesia Climate Change Trust Fund
ICPC	Indonesian Cleaner Production Center
IDR	Indonesian rupiah (currency)
IEPC	Industrial Efficiency and Pollution Control Project
IGF	Indonesia Green Fund
IGIF	Indonesia Green Investment Fund
IMF	International Monetary Fund
ISO	International Standardization Organization
IT	information technology
JBIC	Japan Bank for International Cooperation
KADIN	Indonesian Chamber of Commerce and Industry
KfW	Kreditanstalt für Wiederaufbau
KLH	Kementerian Lingkungan Hidup (Ministry of Environment of Indonesia)
MDG	Millennium Development Goals
MoA	Ministry of Agriculture
MoE	Ministry of Energy and Resources

MoF	Ministry of Finance
MoI	Ministry of Industry
MSC	Marine Stewardship Council
MTEF	Medium term expenditure framework
MW	Megawatts
N	Nitrogen
NIE	National Implementing Entity
NO2	Nitrogen dioxide
OECD	Organization for Economic Cooperation and Development
ODA	Official development assistance
P	Phosphorous
PEEP	public environmental expenditure program
PR	People's Republic
PROPER	Program of Environmental Performance Rating Assessment of Industries/Companies
PRTR	Pollutant Release and Transfer Register
QMS	Quality Management System
R&D	research and development
RAN GRK	Rencana Aksi Nasional Gas Rumah Kaca (National Action Plan – Green House Gases)
REDD+	Reducing emissions from deforestation and forest degradation
SIDA	Swedish International Development Cooperation Agency
SME	small and medium sized enterprises
SO2	Sulfur dioxide
SCP	Sustainable Consumption and Production
TRC	Test Result Certificate
UNEP	United Nations Environment Program
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UNIDO	United Nations Industrial Development Organization
USD	United States Dollar (currency)
VA	voluntary agreement
VAT	Value added tax
VPA	voluntary partnership agreements

1 BACKGROUND TO THE REPORT

The present report has been elaborated to support the implementation of the Sustainable Consumption and Production (SCP) Policy Project – Indonesia, a project hosted by the Ministry of Environment and funded by the European Union under the SWITCH Asia Programme to Promote Sustainable Consumption and Production in Asia. The present report has been prepared based on the requirements included in the consultants' terms of reference (see full terms of reference in annex 1).

The goal of the study has been stated as follows in the terms of reference: "Incentives and policy instruments for the promotion of sustainable production in the Indonesian context shall be identified and examined, and public consultation shall be held to ensure broad consensus on the findings". Key questions addressed by the study include:

- Which results and drawbacks have existing policy instruments brought about as regards sustainable production?
- Which legislation/policies create obstacles for more sustainable production?
- Which additional policy instruments would be desirable to further encourage innovation in industry leading to more sustainable production?
- How could additional private and/or public finance be realized in support of sustainable production?
- What can be done to better involve SMEs in sustainable production?

In the framework of the present study sustainable production is characterized as follows:

- Production process with:
  - less and more efficient use of raw materials, energy and water;
  - less waste, wastewater & emissions;
  - recycling and/or reuse of waste materials.
- Production of environmentally friendlier products (no heavy metals, energy saving product, biodegradable, recyclable, etc.)
- Purchasing of "greener" raw/input materials

The following types of policy instruments are covered in the present report, whereas the focus is on economic and non-economic instruments:

Regulatory instruments ("command and control")
- Norms and standards
- Environmental control and enforcement

Economic instruments
- Environmental taxes, fees and charges
- Environmental financing, subsidies
- Green procurement

Non-economic instruments
- Research, education and training
- Voluntary agreements
- Technology transfer
- Eco-labeling
- Information, reporting

Rony Sumaryana drafted sections 3 - 4.2 and Kai Berndt drafted sections 2.4 and 4.3. Other sections were drafted by Juerg Klarer, who also had overall responsibility for producing the draft report.

The project team welcomes comments and proposals to further improve the present report.

2 INTERNATIONAL GOOD PRACTICE

2.1 Sources of good practice

A considerable amount of information is available online nowadays on policy instruments for SCP, related good practice and examples from around the world. Selected sources include:

- The European Commission's page on environment, in particular:
  - Green public procurement
  - Industry and environment
  - Resource efficiency
  - Sustainable consumption and production
  - Sustainable cities
  - Sustainable use of natural resources
  - Waste
- Relevant OECD websites, including:
  - Green growth and sustainable development
  - Environmental policy tools
  - Resource productivity and waste
- Relevant UNEP websites, for example:
  - Green economy
  - Resource efficiency
- Relevant UNIDO websites, for example:
  - Green industry; resource efficient and cleaner production
  - greenindustryplatform.org
  - recpnet.org

The reference section of the present report includes numerous specific reports used in the process of preparing this study and the interested reader is kindly invited to refer to these reports for a wealth of additional and more detailed information.

2.2 Command and control instruments

Although the focus of the present report is on economic, financial and non-economic instruments as defined in sections 2.3 and 2.4 below, the authors believe that such instruments should not be considered in isolation of the overall environmental management framework for sustainable production which includes also command and control instruments. For example, specific economic instruments operate often as part of a policy mix which is based on command and control instruments, such as industry permits, norms, standards, monitoring, control and enforcement.

According to (GTZ et al. 2006), norms and standards are rules and targets set by public authorities ("command") that subsequently are enforced by compliance procedures ("control"). Such norms and standards have legally binding nature and are applied to achieve numerous aims: reducing emissions and waste, increasing resource or energy efficiency, reducing the use of toxic substances, protecting eco-systems, protecting human health, etc.

Norms and standards are used to help implement the "Polluters Pay Principle", a policy principle that states that the polluter should bear the expenses of preventing and controlling pollution to ensure that the environment is in an acceptable state, whereas the notion of an "acceptable state" is decided by public authorities. In other words, the cost of these measures should be reflected in the cost of goods and services which cause pollution in production and/or consumption. Such measures should not be accompanied by subsidies that would

create significant distortions in international trade and investment (see OECD 2006 on a detailed discussion of the Polluter Pays Principles, its application and possible exceptions).

The following types of norms and standards are commonly used in environmental policy:

Type of standard	Description
Emission standards	Specify the maximum level of permitted emissions in quantitative terms (performance based standards
Ambient standards	Set minimum level of air, water or soil quality that must be maintained.
Technology standards	Specify which kind of technology must be used, e.g. by prescribing or forbidding certain technologies, or by referring to best available technologies.
Management and process standards	Specify certain behaviors and activities, e.g. regular monitoring or maintenance activities or the establishment of take-back-schemes.
Product standards	Specify certain product characteristics, e.g. on chemical residues in products or energy efficiency characteristics.
Source: GTZ et al. 2006	

According to (GTZ et al. 2006), environmental control and enforcement includes activities of the public sector to inspect companies or projects whether they comply with environmental regulations, laws and standards. It also includes authorities' activities or services to grant permits to projects and operations. In addition, the "polluter" or party causing environmental impacts can apply self-control mechanisms to monitor environmental impacts. Environmental control and enforcement therefore includes:

- *Permits*: Permitting processes usually require assessments completed by authorities, based on the application of established norms and standards. The conditions when to give or reject a permit need to be defined.
- *Inspection* of companies performed by authorized public inspectors in order to assess compliance with permits, environmental regulation, laws, emission standards and other environmental impacts.
- *Control* or verification of information submitted by companies.
- *Self-control* of companies, e.g., in the framework of voluntary agreements. Environmental self-control can, for example, be covered through environmental management systems such as EMAS or ISO 14001.

A recent OECD study (OECD, 2009) has identified the following trends in efforts to enhance environmental compliance assurance:

- Increased focus of performance assessment on environmental outcomes, e.g., through the use of performance indicators to assess levels of compliance with regulatory requirements and reductions of the negative impact on the environment.
- Integration of environmental permitting and compliance monitoring regimes across media (air, water, waste, etc.).
- Growing importance of compliance promotion particularly targeted at SMEs, where businesses receive information, assistance and incentives while regulators can save resources on enforcement.
- Targeting of compliance monitoring on facilities where potential environmental risks are greatest and/or where operator performance suggests a higher risk of non-compliance.
- Shifting responsibility for monitoring environmental impacts away from authorities to businesses, whereas appropriate oversight safeguards are put in place.
- Making enforcement more proportionate to the extent of non-compliance.

- Enhancing stakeholder cooperation, transparency and public disclosure of information, e.g. by engaging in regulator-business dialogues (compliance promotion) or by publicly disclosing enforcement and non-compliance information.
- Mobilizing opportunities provided by information technology, e.g., by using web-based monitoring and reporting tools.

To illustrate a modern command and control system, and, as we will introduce a number of European examples of economic and financial instruments throughout the report, the text below summarizes briefly the current EU policy on industrial emissions.

EU policy on industrial emissions

The Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control) defines the obligations to be met by industrial activities with a major pollution potential. It establishes a permit procedure and lays down requirements, in particular with regard to discharges. The objective is to avoid or minimize polluting emissions in the atmosphere, water and soil, as well as waste from industrial and agricultural installations, with the aim of achieving a high level of environmental and health protection. This Directive covers all industrial activities with a major pollution potential, defined in Annex I to the Directive. Special provisions are provided for combustion plants (≥ 50 MW); waste incineration or co-incineration plants; certain installations and activities using organic solvents; and, installations producing titanium dioxide.

Any industrial installation which carries out the activities listed in Annex I to the Directive must meet certain basic obligations:

- preventive measures are taken against pollution;
- the best available techniques (BAT) are applied;
- no significant pollution is caused;
- waste is reduced, recycled or disposed of in the manner which creates least pollution;
- energy efficiency is maximized;
- accidents are prevented and their impact limited;
- sites are remediated when the activities come to an end.

Industrial installations must use the best available techniques to achieve a high general level of protection of the environment as a whole, which are developed on a scale which allows implementation in the relevant industrial sector, under economically and technically viable conditions. The European Commission is required to adopt BAT conclusions containing the emission levels associated with the BAT. These conclusions serve as a reference for permits.

The permit provides for the necessary measures to ensure compliance with the operator's basic obligations and environmental quality standards. These measures comprise at least:

- emission limit values for polluting substances;
- rules guaranteeing protection of soil, water and air;
- waste monitoring and management measures;
- requirements concerning emission measurement methodology, frequency and evaluation procedure;

- an obligation to inform the competent authority of the results of monitoring, at least annually;
- requirements concerning the maintenance and surveillance of soil and groundwater;
- measures relating to exceptional circumstances (leaks, malfunctions, momentary or definitive stoppages, etc.);
- provisions on the minimization of long-distance or trans-boundary pollution;
- conditions for assessing compliance with the emission limit values.

Special provisions apply to combustion plants, waste incineration and co-incineration plants, installations using organic solvents and installations producing titanium dioxide. The emission limit values for large combustion plants laid down in Annex V to the Directive have generally become more stringent than those in the earlier Directive 2001/80/EC.

EU Member States are required to set up a system of environmental inspections of the installations concerned. All installations need to be covered by an environmental inspection plan. The plan needs to be regularly reviewed and updated. Based on the inspection plans, the competent authority regularly draws up programmes for routine environmental inspections, including the frequency of site visits for different types of installations. The period between two site visits needs to be based on a systematic appraisal of the environmental risks of the installations concerned. It may not exceed one year for installations posing the highest risks and three years for installations posing the lowest risks.

In order to gain a more detail insight in the above policy, the interested reader is encouraged to visit the EC's website on industrial pollution. A recent report on good practices in the provision of penalties related to EU legislation on industrial installations may also serve as a useful reference document.

Another important cornerstone of EU industrial emission policy is the European Pollutant Release and Transfer Register (E-PRTR) Regulation (EC) No 166/2006, which introduces a new Europe-wide register that provides for easily accessible key environmental data from industrial facilities in all European Union Member States plus Iceland, Liechtenstein and Norway. The register contains data reported annually by some 24,000 industrial facilities covering 65 economic activities.

For each facility, information is provided concerning the amounts of pollutant releases to air, water and land as well as off-site transfers of waste and of pollutants in waste water from a list of 91 key pollutants including heavy metals, pesticides, greenhouse gases and dioxins for the year 2007 onwards. Some information on releases from diffuse sources is also available and will be gradually enhanced. The register contributes to transparency and public participation in environmental decision-making. The first reporting year under the E-PRTR has been 2007, for which the data were reported in June 2009. These data are now published in the Register. From 2010 on, Member States need to report data to the E-PRTR by the end of March and the Register website will be updated accordingly.

2.3 Economic incentives

Tax and subsidy instruments

One of the internationally most widely used and robust definitions and classification of economic and financial instruments for environmental protection is that developed by the Organization for Economic Cooperation and Development (OECD). The 1998 OECD publication "Economic Instruments for Pollution Control and Natural Resources Management in OECD Countries", provides for the following definitions and categorization:

- Emission taxes/charges: direct payments based on the measurement or estimation of the quantity and quality of a pollutant.
- User charges: payments for the cost of collective services. They are primarily used as a financing device by local authorities e.g. for the collection and treatment of solid waste and sewage water. In the case of natural resource management, user fees are payments for the use of a natural resource (e.g. park, fishing, or hunting facility).
- Product taxes/charges: applied to products that create pollution either through their manufacture, consumption, or disposal (e.g. fertilizers, pesticides, batteries, etc.). Product charges are intended to modify the relative prices of the products and/or to finance collection and treatment systems.
- Taxes for natural resource management are unrequited payments for the use of natural resources.
- Marketable (tradable, transferable) permits, rights, or quotas (also referred to as "emissions trading") are based on the principle that any increase in emission or in the use of natural resources must be offset by a decrease of an equivalent, or sometimes greater, quantity. Two broad types of tradable permit systems are in operation: those based on emission reduction credits (ERCs), and those based on ex ante allocations ("cap-and-trade").
    - The former approach takes a "business as usual" scenario as the starting point, and compares this baseline with actual performance. If an emitter/user performs better than the anticipated baseline, a "credit" is earned. This credit can then either be used by the emitter/user himself, either at the current location or elsewhere, or sold to some other emitter whose emissions are higher than the accepted baseline (and presumably at a lower price than what it would cost the latter to abate on his own).
    - The "cap-and-trade" approach sets an overall emission/use limit (the "cap") and requires all emitters to acquire a share in this total. Emitters may be allocated their shares free-of-charge by a relevant environmental authority, or the shares may be auctioned. Regardless of how the initial allocation of shares is determined, their owners can then either utilize them as emission permits in current production, save them for future use (if "banking" is allowed), or trade them with other emitters.
- Deposit-refund systems: payments made when purchasing a product (e.g. packaging). The payment (deposit) is fully or partially reimbursed when the product is returned to the dealer or a specialized treatment facility.
- Non-compliance fees: imposed on polluters who do not comply with environmental or natural resource management requirements and regulations. They can be proportional to selected variables such as damage due to non-compliance, profits linked to reduced (non-) compliance costs, etc.
- Performance bonds: used to guarantee compliance with environmental or natural resources requirements, polluters or users may be required to pay a deposit in the form of a "bond". The bond is refunded when compliance is achieved.
- Liability payments: payments made under civil law to compensate for the damage caused by a polluting activity. Such payments can be made to "victims" (e.g. in cases of chronic or accidental pollution) or to the government. They can operate in the context of specific liability rules and compensation schemes, or compensation funds financed by contributions from potential polluters (e.g. funds for oil spills).
- [Environmental/green] subsidies: all forms of explicit financial assistance to polluters, users of natural resources [and other entities], e.g. grants, soft loans, tax breaks, accelerated depreciation, etc. for environmental protection [related investments and projects].

Relevance of environmental taxes in Environmental Fiscal Reform policies

It should be mentioned that economic and financial instruments are nowadays often discussed in the context of a larger "environmental fiscal reform" or in the context of "green economy". Below follows a brief introduction to the concept of environmental fiscal reform.

According to the European Environment Agency [EEA 2005], Environmental Tax Reform (ETR) can be defined as a reform of the national tax system where there is a shift of the burden of taxation from conventional taxes, for example on labor, to environmentally damaging activities, such as resource use or pollution. The burden of taxes should fall more on 'bads' than 'goods' so that appropriate signals are given to consumers and producers and the tax burdens across the economy are better distributed from a sustainable development perspective. The economic rationale is that welfare gains are generated by reducing taxes on labor or capital and increasing taxes on externalities and hence helping to avoid 'welfare-reducing' activities. A typical case is an increase in the taxation of energy and a simultaneous reduction in labor taxes or social security contributions.
Environmental fiscal reform (EFR) is a broader approach, which focuses not just on shifting taxes and tax burdens, but also on reforming economically motivated subsidies, some of which are harmful to the environment and may have outlived their rationale. EFR is a more recent development than ETR and offers even greater opportunities for progress.

EFR supports the implementation of the following key environmental policy principles, which are now firmly established in many countries:

- Polluter Pays Principle
- User Pays Principle
- Sustainable Development Principle
- Prevention and Precautionary Principles
- Modern integrated pollution prevention and control instruments
- Promotion of environmental technologies, environmental industry and technological innovation

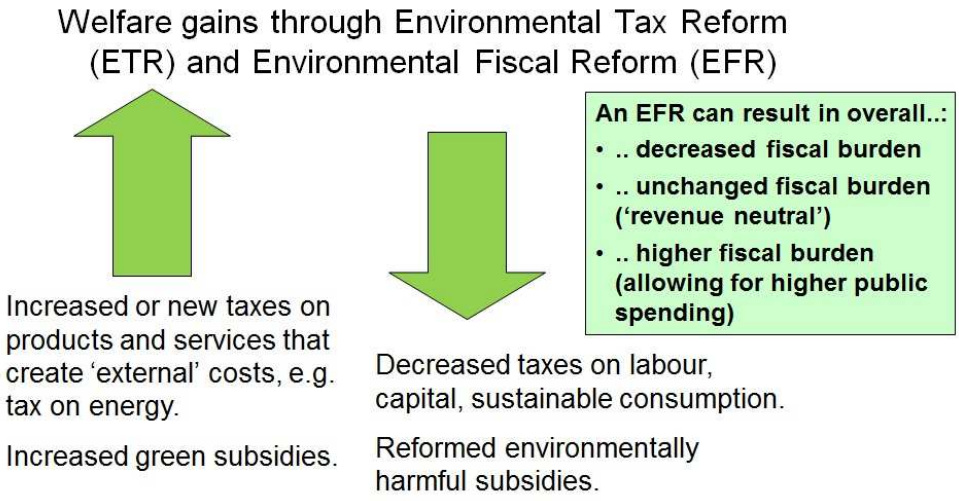
The theoretical rationale and justification for EFR draws on the concepts of scarcity, externalities and resource efficiency:

- Most environmental assets are public goods which have an obvious value but are not exchanged on markets (e.g., clean air, clean water, fishery resources, ecosystems, etc.), and therefore no price emerges to signal relative scarcity. EFR can assign such price reflecting scarcity.
- Economic activities generate pollution and waste that leads to costs to others – 'externalities' (e.g., increased health costs due to air pollution related respiratory diseases). EFR can help 'internalize' such 'external' costs.
- By providing appropriate price and subsidy signals, EFR can also encourage a more efficient allocation and use of natural resources.

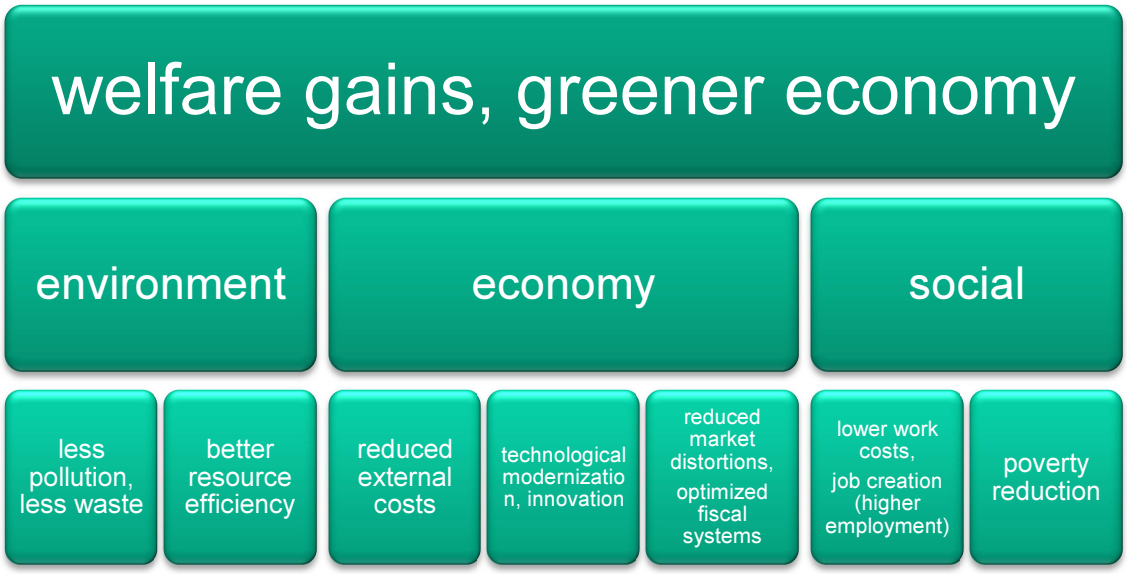
EFR is a key element in policies to "green the economy", a concept which is now very high on the political agenda as evidenced by the following initiatives and processes:

- "Green Economy" was the leading theme at the 2012 Rio+20 UN Earth Summit
- OECD's Green Growth Strategy
- UNEP's Green Economy Initiative
- The European Union's Environmental Technology Action Plan (ETAP) and Sustainable Consumption and Production (SCP) Action Plan
- Many countries have embarked on green growth strategies and green impulse programs as a response to the 2008/9 financial crisis

Four main policy approaches characterize EFR agendas: 1) increased taxation of pollution, unsustainable production/consumption, and/or resource use (economic "bads"); 2) decreased taxation of labor, capital and/or sustainable consumption/production; 3) increased investment into green technologies and services; and 4) decreased/reformed subsidies that are harmful to the environment.



If designed properly, EFR can produce the following benefits and welfare gains:



The following type of policy instruments are typically used in EFR (note that the first four groups of instruments correspond to "economic instruments" as defined earlier in the present section):

- Eco-taxes and environmental charges, levied for example on emissions (e.g., CO2, SO2, etc.), water effluent/pollutants, water abstraction, energy (e.g., fuels, sulfur in fuels, etc.), transport (annual circulation, car registration/import/emissions, motor size), landfill and/or incineration, resources (raw materials, minerals), environmentally harmful products (packaging material, electric/electronic products, tires, pesticides, batteries, etc.);
- Other fiscal instruments such as import duty differentiation, VAT rate differentiation, accelerated depreciation, etc.;

- Emissions trading which can help ensure that a given overall emission target is met via allocation and trading of emission allowances;
- Green subsidies, such as investment grants, soft loans, interest subsidies and equity finance for investment supporting the implementation of environmental policy, or, for catalyzing the uptake or mainstreaming of environmental technologies, etc.;
- Reform of environmentally harmful subsides, e.g. subsidies that were introduced for other purposes than environmental policy but effectively counter-act environmental policy or support unsound environmental practices or wasteful resource use;
- Green public procurement which can catalyze the mainstreaming of environmentally sound technologies and foster the environmental industry by including sustainability criteria in purchasing decisions;
- Measures aimed at "greening" the yearly or longer term public budgeting processes, e.g., by including sustainability criteria in budget formulation (annual budgets, MTEF planning);
- Measures aimed at greening commercial finance (e.g., financial products and services offered by commercial banks, insurance and leasing companies);
- Measures aimed at greening FDI, greening ODA, greening public private partnerships, green public-private voluntary agreements, etc.

Use of Environmental taxes in Europe

Coming back to the discussion of environmental taxes, one can state that in recent years a number of studies were carried out on the use of economic and financial instruments for environmental policy covering a range of countries and using above mentioned classification and definitions. These studies[1] basically covered all European countries, non-European OECD countries (Australia, Canada, Chile, Israel, Japan, Mexico, New Zealand, South Korea, Turkey, USA), as well as EECCA countries (Eastern Europe, Caucasus and Central Asia). It is from these surveys and databases that we can draw reliable and methodologically reliable information that allows for the comparison of economic instruments in environmental policy in different countries.

The graphs below include an overview of environmental taxes and charges in European countries. Most of these countries have introduced a significant number of environmental taxes and charges. Please note that the information contained in the tables shows the situation in 2004/2005. Since then several countries have introduced new environmental taxes. Many of these are reported in the OECD/EEA eco-tax database.

[1] Reference is made here to (OECD, 1998), which covered OECD countries, (Klarer, 1999) which covered Central and Eastern European countries and (OECD, 2003) which covered EECCA countries. More or less up to date information on the use of economic instruments in all mentioned countries, except for EECCA countries, is available in the joint OECD-EEA internet database on instruments used for environmental policy and natural resources management.

Overview of environmental taxes and charges in Western European countries															
	Austria	Belgium	Denmark	Finland	France	Germany	Greece	Ireland	Italy	Netherlands	Norway	Portugal	Spain	Sweden	UK
Air/energy															
Energy/carbon dioxide			X	X		X		X	X	X	X			X	X
Sulfur dioxide			X		X				X		X				
Nitrogen dioxide					X				X					X	
Other air pollutants			X												
Fuels	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sulfur in fuels		X	X	X		X				X	X			X	X
Other GHGs			X								X				
Transport															
Car registration	X	X	X	X	X		X	X	X	X	X	X	X		
Annual circulation tax	X	X	X	X		X	X	X	X	X	X	X	X	X	X
Water															
Water effluent	X	X	X	X	X	X			X	X	X		X	X	X
Water abstraction			X		X	X			X	X			X		X
Waste															
Landfill and/or incineration tax	X	X	X	X	X				X	X	X		X	X	X
Products															
Tires			X	X						X					
Beverage/disposable containers		X	X	X							X			X	
Packaging	X		X		X				X		X				
Bags			X					X	X						
Pesticides		X	X	X							X			X	
Products with CFCs	X		X												
Batteries	X	X	X						X					X	
Light bulbs			X												
PVC/phthalates			X												
Lubrication oil				X					X		X		X		
Fertilizers (N,P) – minerals			X		X					X				X	
Paper, board		X	X		X										
Resources															
Raw materials		X	X						X					X	X

X indicates occurrence of tax base
Source: European Environmental Agency, Technical Report No 8/2005: Market-based instruments for environmental policy in Europe (see: http://www.eea.europa.eu/publications/technical_report_2005_8/at_download/file).

Overview of environmental taxes and charges in Eastern European countries															
	Czech Rep.	Estonia	Hungary	Latvia	Lithuania	Poland	Slovenia	Slovakia	Bulgaria	Romania	Croatia	Russia	Ukraine	Belarus	Moldova
Air/energy															
Energy/carbon dioxide		X				X	X								X
Sulfur dioxide	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Nitrogen dioxide	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Other air pollutants	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Fuels	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sulfur in fuels									X	X					X
Other GHGs															
Transport															
Car sales / imports			X	X	X	X		X	X	X		X	X	X	X
Circulation tax	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Water															
Water effluent	X	X	X	X	X	X	X	X	X	X		X	X	X	X
Water abstraction	X	X	X	X	X	X	X	X	X	X		X	X	X	X
Waste															
Waste taxes	X	X		X		X		X		X	X	X	X	X	X
Products															
Tires			X	X	X			X	X						X
Beverage containers	X		X											X	X
Packaging		X		X	X	X									X
Bags															
Pesticides															
CFCs	X		X	X				X		X					
Batteries			X	X	X			X	X						X
Light bulbs				X	X			X							X
PVC/phthalates								X							
Lubrication oil	X		X	X			X	X							
Fertilizers (N,P) – minerals															
Paper, board				X	X			X							
Resources															
Raw materials		X	X	X	X				X		X	X	X	X	X

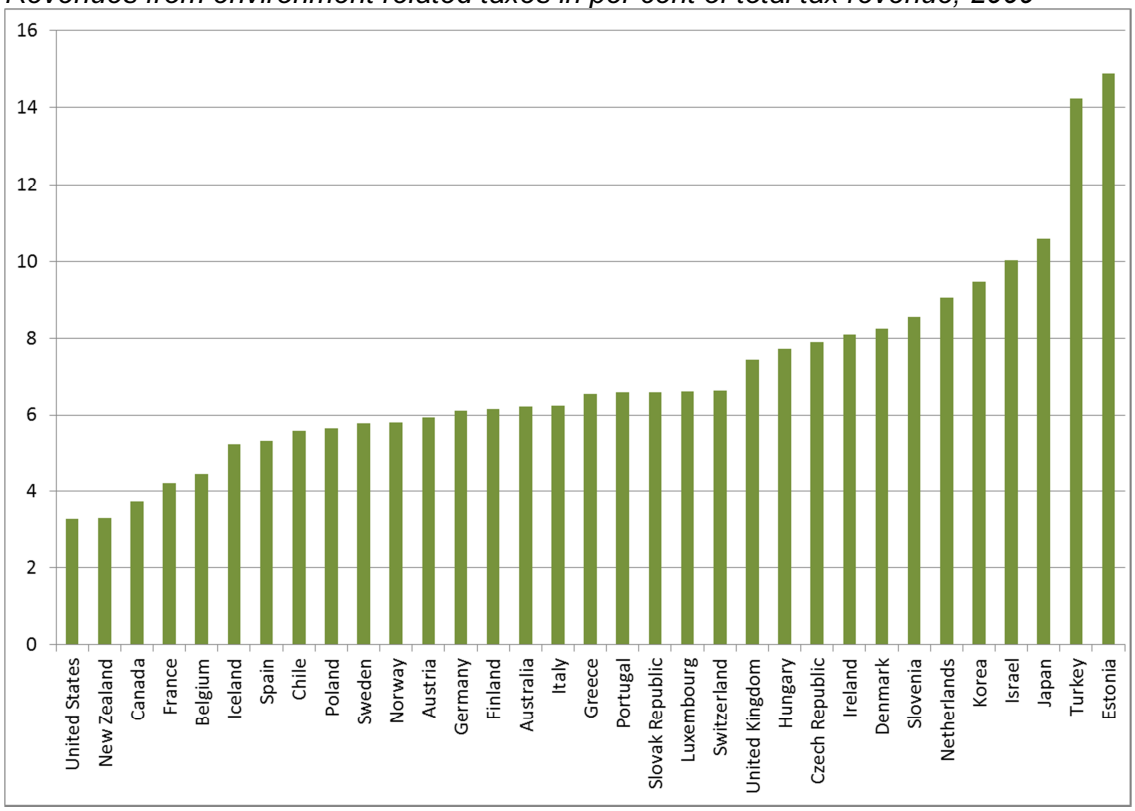
X indicates occurrence of tax base
Source: European Environmental Agency, Technical Report No 8/2005: Market-based instruments for environmental policy in Europe (see: http://www.eea.europa.eu/publications/technical_report_2005_8/at_download/file).

The significance of environmental taxes in fiscal policies

The significance of environmental taxes in fiscal policies has continued to increase in OECD countries in recent years. In average, environmental tax revenue nowadays accounts for about 5% of total tax revenue in OECD countries. In terms of volume of revenue, by far the most important environmental taxes in all OECD countries are taxes on energy products and taxes on motor vehicles and transport. Other environmental taxes typically do not constitute major tax revenue sources and the revenues of these types of environmental taxes are often earmarked to finance public spending programs related to the tax base.

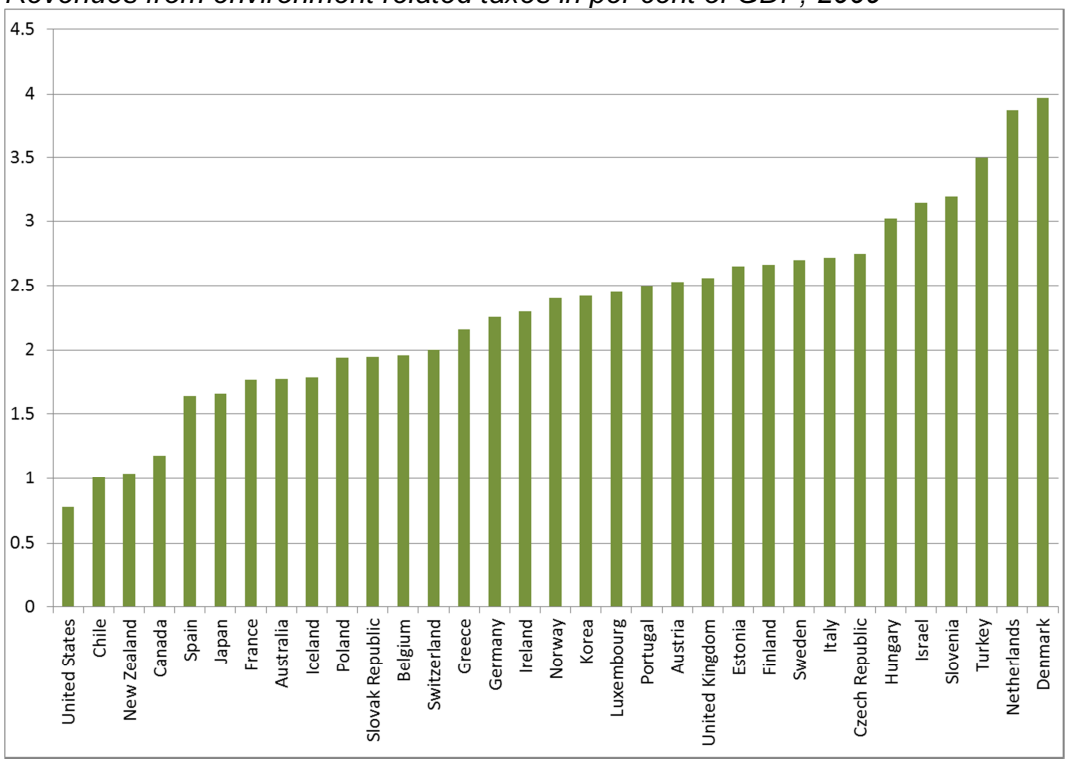
The following graphs show 2009 revenues from environmental taxes as percent of total tax revenue, as well as percent of GDP and per capita of population of each OECD country.

Revenues from environment related taxes in per cent of total tax revenue, 2009



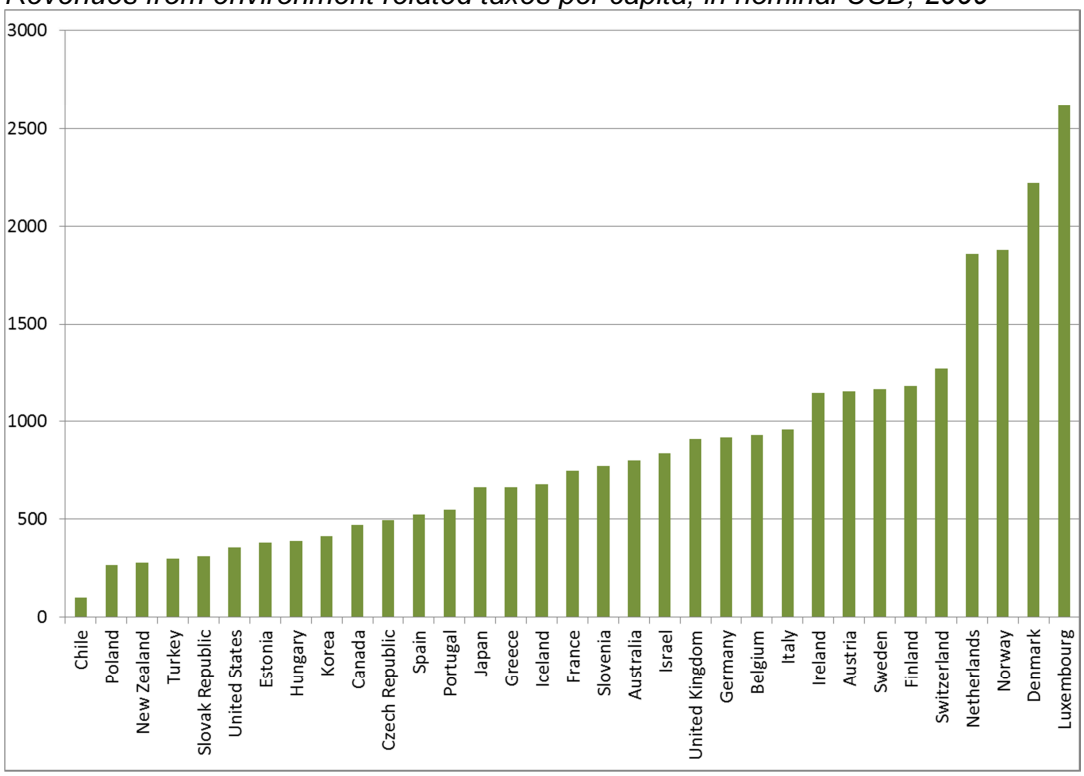
Source: OECD/EEA eco-tax database.

Revenues from environment related taxes in per cent of GDP, 2009



Source: OECD/EEA eco-tax database.

Revenues from environment related taxes per capita, in nominal USD, 2009



Source: OECD/EEA eco-tax database.

Good Practice in applying environmental taxes

A significant body of literature exists today on international good practice in applying environmental taxes. Most useful and developed is OECD good practice. In September 2011, the OECD published a summary of good practice in applying environmental taxes in the "Guide for Policy Makers on Environmental Taxation". This guide states:

Why use environmental taxes?

- Taxes can directly address the failure of markets to take environmental impacts into account by incorporating these impacts into prices.
- Environmental pricing through taxation leaves consumers and businesses the flexibility to determine how best to reduce their environmental "footprint".
- This enables lowest-cost solutions, provides an incentive for innovation and minimizes the need for government to attempt to "pick winners".

How to design environmental taxes?

- Environmental tax bases should be targeted to the pollutant or polluting behavior, with few (if any) exceptions.
- The scope of an environmental tax should ideally be as broad as the scope of the environmental damage.
- The tax rate should be commensurate with the environmental damage.
- The tax must be credible and its rate predictable in order to motivate environmental improvements.
- Environmental tax revenues can assist fiscal consolidation or help to reduce other taxes.
- Distributional impacts can, and generally should, be addressed through other policy instruments.
- Competitiveness concerns need to be carefully assessed; coordination and transitional relief can be effective responses.
- Clear communication is critical to public acceptance of environmental taxation.
- Environmental taxes may need to be combined with other policy instruments to address certain issues.

The policy guide discusses above points in some detail. Another recent OECD publication entitled "Taxation, Innovation and the Environment" elaborates even further on these points.

Earmarking environmental tax revenue, public environmental expenditure schemes

As we have seen above, the OECD "Guide for Policy Makers on Environmental Taxation" states that "Environmental tax revenues can assist fiscal consolidation or help to reduce other taxes". While OECD member state practice suggests not to earmark environmental tax revenue, mainly because of arguments related to budget integrity, it is important to mention that the OECD Council Recommendation C(2006)84 on "Good Practices for Public Environmental Expenditure Management", which has been developed as a result of the OECD's work on environmental finance and policy in less developed Eastern European countries during 1990-2005, has stated clearly that revenues from environmental taxes may and sometimes should (i.e., on a temporary basis) be used for financing public environmental spending programs in order to catalyze the implementation of environmental policy. Indeed, most new EU Member States from Central and Eastern Europe as well as Candidate States for EU membership have used earmarking of environmental tax revenues for various types of Environmental Funds. This was largely justified by the need of massive public expenditure in the environment sector in order to catalyze and ensure the eventual implementation of EU environmental policy and law.

All new EU Member States from Central and Eastern Europe have made extensive use of Environmental Funds to manage public environmental expenditure programs in support of fi-

nancing the implementation of the EU environmental legislation (unless otherwise indicated, data in the following list refer to the year 2000, i.e. a few years before eventual membership in the European Union; source of information: REC (2001): Environmental Funds in the Candidate Countries):

- In Bulgaria, the National Environmental Protection Fund has been established in 1993. In 2000 the Fund had revenues in the amount of 26 million Euro and expenditures in the amount of 28.4 million Euro. Major revenue sources: 87% of the revenues came from earmarked product taxes, 5% from earmarked non-compliance fines. 60% of the expenditures were made in the form of grants and 30% in the form of interest free loans.
- In Bulgaria, a second Fund was established in 1996, namely the National Trust Eco-Fund. This Fund received most of its revenue from a debt-for-environment swap and provided grants to its beneficiaries.
- In the Czech Republic, the State Environmental Fund was established in 1992 and in 2000 had revenues in the amount of 98.4 million Euro and expenditures in the amount of 78.7 million Euro. Major revenue sources: 50% of the revenues came from earmarked pollution/emission taxes, 40% from loan repayments. 69% of the expenditures were made in the form of grants and 26% in the form of soft loans.
- In Estonia, the Environmental Fund (since 2000: Environmental Investment Centre) was established in 1990 and in 2000 had revenues in the amount of 16.3 million Euro and expenditures in the amount of 10.0 million Euro. Major revenue sources: 42% of the revenues came from earmarked pollution/emission taxes, 22% from earmarked resource taxes, 23% from privatization proceeds and 9% from earmarked tree cutting taxes. 100% of the expenditures were made in the form of grants.
- In Hungary, the Central Environmental Protection Fund (since 1999: Environmental Protection Fund Appropriation) was established in 1986 and in 2000 had revenues in the amount of 111.9 million Euro and expenditures in the amount of 112.8 million Euro. Major revenue sources: 51% of the revenues came from earmarked product taxes, 10% from loan repayments and 31% from budget allocations. 95% of the expenditures were made in the form of grants and 5% in the form of interest free loans.
- In Latvia, the Environmental Protection Fund was established in 1996 and in the year 2000 had revenues in the amount of 16 million Euroe and expenditures in the amount of 17.4 million Euro.
- In Lithuania, the Environmental Investment Fund was established in 1996 and in 2000 had revenues in the amount of 3.2 million Euro and expenditures in the amount of 0.8 million Euro. Major revenue sources: 38% of the revenues came from earmarked pollution/emission taxes and 60% from foreign loans. 98% of the expenditures were made in the form of interest free loans.
- In Poland, the National Fund for Environmental Protection and Water Management was established in 1989 and in 2000 had revenues in the amount of 391.2 million Euro and expenditures in the amount of 304.8 million Euro. Major revenue sources: 28% of the revenues came from earmarked pollution/emission taxes, 60% from loan and loan interest repayments. 26% of the expenditures were made in the form of grants and 72% in the form of soft loans.
- In Poland, in addition to the National Fund for Environmental Protection and Water Management, also the Polish EcoFund has been established as well as 16 Provincial Funds for Environmental Protection and Water Management. Overall this system of Environmental Funds in Poland received and spent more than 1 billion Euro in revenues in 2000. One example of a Provincial Fund for Environmental Protection and Water Management is the Krakow Provincial Fund for Environmental Protection and Water Management, which was established in 1993 and in the year 2000 had revenues in the amount of 26.3 million Euro and expenditures in the amount of 19.7 million Euro. Major revenue sources included: 47% of the revenues came from earmarked pollution/emission taxes, 40% from loan and loan interest repayments. 15%

of the expenditures were made in the form of grants and 85% in the form of soft loans.

- The Polish EcoFund was established in 1992 as a debt-for-environment swap and had revenues in the amount of 41.8 million Euro and expenditures in the amount of 33.5 million Euro. Major revenue sources: 81% of the revenues came from debt-for-environment payments, 9% from foreign grants. 100% of the expenditures were made in the form of grants.
- In Slovakia, the State Fund for Environment was established in 1991 and in 2000 had revenues in the amount of 37.0 million Euro and expenditures in the amount of 24.6 million Euro. Major revenue sources: 62% of the revenues came from earmarked pollution/emission taxes and 25% from privatization proceeds. 83% of the expenditures were made in the form of grants and 17% in the form of soft loans.
- In Slovenia, the Environmental Development Fund was established in 1994 and in 2000 had revenues in the amount of 24.4 million Euro and expenditures in the amount of 29.3 million Euro. Major revenue sources: 60% of the revenues came from loan and loan interest repayments, 26% from foreign loans and 10% from privatization proceeds. 100% of the expenditures were made in the form of soft loans.

More recently, Environmental Funds have also been established in Romania, Serbia, Bosnia and Croatia. Montenegro and Albania have been preparing for establishing Environmental Funds to support the financing of the EU accession process and the eventual implementation of EU environmental legislation. For example in Croatia, the Environmental Protection and Energy Efficiency Fund was established in 2004. In 2009 (i.e. 4 year ahead of Croatia's EU membership), the Fund had revenues in the amount of 171.1 million Euro and expenditures in the amount of 160.4 million Euro. 93% of the Fund's revenues came from earmarked product and pollution taxes, i.e., CO2 tax, SO2 tax, NO2 tax, industrial hazardous waste tax, motor vehicles tax, packaging materials tax, waste tires tax, waste vehicles tax, waste oils tax, waste batteries tax, tax on ozone depleting substances and a tax on electric & electronic waste.

It is obvious from the brief review presented above that virtually all Central and Eastern European countries have made extensive use of both, earmarked environmental taxes and Environmental Funds administering these earmarked taxes in recent years. Virtually all of the above mentioned Funds have been established as off-budget (extra-budgetary) public Funds with legal status, own bank accounts and dedicated Boards of Directors and governance structures. Experience with such Funds has been difficult in cases where central government control was high, Funds were subjected strictly to budgetary procedures, or where main stakeholders were not represented adequately on Boards of Directors.

The OECD Council Recommendation C(2006)84 on "Good Practices for Public Environmental Expenditure Management" includes detailed criteria and principles as regards environmental effectiveness and management efficiency of Environmental Funds (referred to as PEEPs – public environmental expenditure programs). These are summarized in the table below.

OECD good international practice in managing Environmental Funds	
Performance in Terms of Environmental Effectiveness	**Performance in Terms of Management Efficiency**
Consistency with policy principles ● The need for any proposed PEEP should be justified with reference to the Polluter- or User-Pays Principles. Public funds should not be spent on achieving environmental objectives that could have been achieved with administrative or economic instruments or by eliminating environmentally harmful subsidies. ● Public funds should not be used for projects that can be implemented anyway e.g. using private/bank finance. ● PEEPs should reinforce other policy instruments and be consistent with their stated objectives. ● PEEPs should be used to finance investments in fixed assets or precisely defined non-investment projects, and not the operational costs of environmental administration. ● External auditors should periodically review the value-added of PEEPs; there should be provisions to phase out public funds after they have fulfilled their purpose. Well-defined programming framework ● Public funds should be spent in the framework of a PEEP approved by appropriate authorities. ● The PEEP should specify measurable, agreed, realistic, time-bound objectives. It should identify eligible beneficiaries, financing needs, eligible project types and rules to guide decision-making so that objectives could be met at least cost. ● Expenditure programmes should be established as part of a wider environmental programme or policy. ● Economic, social, poverty reduction or other non-environmental objectives may be integrated into the public environmental expenditure programme. ● The economic effects of PEEPs (e.g. in terms of public deficit, growth, employment) should be assessed prior to PEEP establishment and evaluated regularly thereafter. Clear identification of environmental outcomes ● Standard application forms should be used to solicit quantitative and qualitative information on projects' environmental outcomes. Once obtained, the accuracy and reliability of this information should be verified. ● Indicators of environmental outcomes should be as unambiguous as possible and used as essential criteria in project appraisal and selection. Environmental outcomes should be valued in monetary terms for the purpose of explicit benefit-cost assessment of projects. ● Environmental outcomes should be monitored throughout the project cycle and after implementation; project level environmental data should be stored in a publicly available database that allows ex-post verification and analysis.	Sound governance ● PEEPs should be governed by clear, explicit rules. ● The terms and conditions of financing, decision-making and administrative procedures, internal policies and principles of project appraisal and selection should be available to the public. They should be consistent, not change frequently or without explanation, and be periodically reviewed. ● A clear distinction should be made between policy-making (including programming, priority-setting, establishing rules, performance evaluation, supervision and control) and executive management functions. ● An appropriate arrangement should be made for the policy-making function, such as the establishment of a supervisory board. Political oversight should be confined to programming and supervision. ● The supervisory board of a PEEP should include representation from the key stakeholders with appropriate checks and balances between different interest groups. Professional executive management ● Responsibilities for the day-to-day management and implementation of PEEPs should be clearly separated from policy-making, clearly defined in statutory and operational documents, and shielded from ad hoc political pressures in support of specific projects. ● An implementing agency should have a clear, legal mandate. It should be a professional, executive management body with an appropriate degree of operational autonomy, subject to strict accountability for performance. Its responsibilities should focus on project cycle management, and in particular, on impartial project appraisal and selection. ● Executive managers should be held accountable for their performance. Explicit performance criteria and indicators should be applied. ● Implementing agencies of large PEEPs should have staff assigned exclusively to their management and selected by executive managers. ● The skills of the staff should adequately match the technical requirements of a given expenditure programme. The recruitment and remuneration of managers and of staff should be based strictly on merit. Remuneration should be adequate to attract and maintain suitably-qualified people. Sound project cycle management ● The project cycle should be subject to intelligible, transparent and written procedures which are consistent and publicly available, e.g. in the form of a manual, in particular to all potential beneficiaries. ● Project identification should be proactive (for example by public tender), follow from the objec-

● If a project fails to achieve its intended outcomes, as stated in the application form or financing contract, project beneficiaries should be liable to sanctions specified in the contract and enforced in proportion to the violation.
● Information on the environmental results achieved by the programme should be periodically reported to those responsible for programme oversight and to the public, reviewed by external auditors and used to assess the programme's performance.

Maximise environmental effect from available funds

● Quantitative information on full, life-time project costs (investment, operational and maintenance) should be requested from applicants in a standard application form and be verified; project level cost data should be tracked and stored in a database format in a way that allows ex-post verification and analysis.
● Project selection criteria should aim to achieve the greatest environmental outcome with the programme's resources. A clear cost-effectiveness indicator (unit lifetime cost of achieving environmental effects) and the rate of financial leverage should form the core of the quantitative basis for appraisal, scoring, ranking and selecting projects. Where justified by project size or other relevant considerations, project selection should be supported by transparent benefit-cost analysis.
● Quantitative information on cost-effectiveness should be periodically reported to those responsible for programme oversight and to the public, be subject to periodic external, independent reviews and be used to assess the programme's performance.

Leverage additional finance

● To maximise their environmental impact, public funds should aim to cover less than 100% of project costs; options for co-financing by the retained earnings of the beneficiary or other sources should be assessed.
● The rate of financial leverage should be used to assess the programme's performance.
● Public environmental expenditure programmes should not distort competition in financial markets, nor obstruct the development of private financial institutions. Financial products used in environmental expenditure programmes should not compete with those offered by private financial institutions.
● Full financial plans of environmental projects should be required; commitments for financing from other sources should be verified. No disbursement should be made until full financing for the project is adequately secured.

tives of the PEEP, and be based on a realistic analysis of market trends and demand for financing.
● Applications for financing should be accepted only in standard forms tailored to different project types and supported by clear, user-friendly instructions.
● Project appraisal and selection criteria and procedures should be objective, transparent and clear. Discretionary elements of project appraisal and selection should be subject to explicit, written procedures, and the results of such decisions kept in publicly-available files.
● Appraisal systems and procedures should be tailored to the size and complexity of different project types. For large investment projects, a two-stage appraisal process should be used (1st stage - screening against eligibility criteria; 2nd stage - appraisal/ranking of eligible projects).
● The appraisal system should be relatively simple, based on impersonal rules, and allow for meaningful comparison of comparable projects against one another, or against a benchmark. The appraisal system should also allow for an ex-post verification of the selection process. Appraisal reports should be clear and publicly available.

Fair and unbiased relations with external stakeholders

● Relations with external stakeholders (beneficiaries, intermediaries, consultants) should be handled in a transparent and unbiased manner. Communication policy should ensure that all applicants have equal access to information.
● Any outsourcing of tasks should be undertaken through a fair, transparent, competitive process.

Management of financial products and related risks

● The complexity of operations, and the choice of financial products, should be proportional to the institutional capacity to manage the associated risks.
● Grants are the most administratively simple and transparent financial product. Grants should be designed and disbursed so as: to maximize incentives for timely and cost-effective implementation of individual projects and of the implementing agency's entire portfolio; to maximise the leverage of other resources; and to minimise chances of misuse by applicants.
● Other financial products (interest subsidies, loans through intermediaries, direct loans, leasing, equity investments and loan guarantees) could be considered in proportion to institutional capacity and in order of increasing risk.

Source: Abbreviated from OECD Council Recommendation C(2006)84. Note that the recommendations on compliance with public finance principles mentioned in the following section should also be taken into account.

It is noteworthy that the use of extra budgetary Environmental Funds receiving revenues from environmental taxes has, under certain circumstances, also been welcomed by the IMF. According to (IMF (2010): Extrabudgetary Funds), in public finance, extra-budgetary Funds are considered acceptable solutions in situations where:

- Major investments (e.g. infrastructure) require multiyear implementation, which in some countries may be incompatible with budget systems operating strictly on a one-year basis
- Chronic interference of special interests in the budgetary process resulting in the misallocation of resources
- Inadequate mechanisms for allocating resources, e.g. if there is a perception that environmental priorities do not receive a fair amount of attention in the budgetary process
- Failure to recognize the needs of local communities in allocating resources, in case of highly centralized budget systems that are little responsive to local needs
- Ineffective control and incentive mechanisms for public sector managers
- Unsatisfactory arrangements for accountability and transparency
- Ineffective mechanisms for addressing donors' fiduciary requirements, i.e. if donors wish to earmark and ring-fence financial support for a specific purpose

Additional reasons for creating extra-budgetary Funds include for example:

- To protect spending programs from budget cuts or other short-term considerations in the context of the annual budget cycle
- To generate and maintain political support for certain taxes, e.g., eco-taxes or resource taxes

The OECD Council Recommendation C(2006)84 also addresses concerns for prudent fiscal and financial management in Environmental Funds and stipulates that:

- If public environmental expenditure programs (PEEPs) receive public revenues, e.g. from earmarked taxes, charges, fees pubic budgets, etc., they should be treated as public funds where relevant regulations are applicable, including public procurement and/or state aid rules as well as transparency requirements.
- Revenues should be recorded in treasury accounts before allocating them to PEEPs
- Earmarking of revenues should be limited to a specified period of time, as long as it can be demonstrated that earmarking is providing value-added
- PEEPs should not incur debt, and in particular, contingent and implicit liabilities (such as loan guarantees) without an explicit, prior approval from fiscal authorities.
- PEEPs should regularly deliver data on revenues, expenditures and liabilities to the MoF
- Internal and external independent financial audits should be regularly carried out
- Provisions have to be made to hold PEEP managers accountable for their decisions
- Appropriate safeguards have to be in place to protect public funds against corruption and fraud. Any potential conflicts of interest should be identified and eliminated.
- Ex-post reports on results achieved should be periodically conducted and publicly disclosed
- Revenue from fiscal or quasi-fiscal instruments should be collected by the appropriate fiscal authorities under the control of treasury services
- National and/or international public procurement rules should apply for all purchases that are co-financed by public funds

Apart from public environmental expenditure schemes which are funded primarily from domestic sources and controlled primarily by domestic authorities and stakeholders, there is of

course a wide variety of other financial mechanisms supporting environmental investments, including in particular donor supported and /or controlled soft loan schemes (such as the soft loan schemes administered by KLH, see section 4.2.2) or multi donor funds (such as the Indonesia Climate Change Trust Fund, see section 4.2.2) or donor-commercial bank schemes, etc. As soon as public funds are involved in such schemes, above mentioned OECD Council Recommendation C(2006)84 on "Good Practices for Public Environmental Expenditure Management" could apply.

Fiscal and subsidy incentives for Green Growth in Malaysia

The Malaysian policy on incentives for green growth may serve as an illustration of a systematic application of fiscal and subsidy incentives for SCP in Asia. In 2012, the Malaysian Ministry of Energy, Green Technology and Water published a compilation of major incentives for green growth in Malaysia comprising the following:

- Income tax exemption of 70% (pioneer status) for a period of 5 years or investment tax allowance of 60% for up to 5 years for:
  - setting up proper facilities to store, treat and dispose of toxic and hazardous wastes
  - companies undertaking waste recycling activities that are high value added and use high technology (applicable for recycling of agricultural wastes/by-products, chemicals and reconstituted wood-based panel boards/products)
- Income tax exemption of 100% (pioneer status) for a period of 5 or 10 years or investment tax allowance of 100% for up to 5 years for companies providing energy conservation services (applicable for recycling of agricultural wastes/by-products, chemicals and reconstituted wood-based panel boards/products), as well as companies that utilize oil palm biomass to produce value added products such as particle board, medium density fiber board, plywood and pulp & paper.
- Investment tax allowance of 100% for up to 5 years for companies providing energy conservation or generating renewable energy (applies to companies undertaking energy conservation or renewable energy generation for own consumption)
- Income tax exemption of 100% (pioneer status) or investment tax allowance of 100% for up to 5 years for companies undertaking generation of energy using biomass, hydropower (not exceeding 10 MW) and solar power
- Import duty exemption for the import of:
  - solar photovoltaic system equipment
  - energy efficiency equipment such as high efficiency motors and insulation materials
- Sales tax exemption for the purchase of
  - solar heating system equipment from Malaysian manufacturers
  - energy efficiency equipment such as high efficiency motors and insulation materials
  - energy efficiency consumer goods such as refrigerators, air conditioners, lightings, fans and TV sets manufactured in Malaysia
- The SAVE rebate program which provides for consumer subsidies through retailers of electronic appliances generating up to 7300 GWh of energy saved by 2020. 2011 budget allocation provides for 100'000 rebate vouchers for 5 star rated refrigerators and 65'000 rebate vouchers for 5 star rated air conditioners offered on a first-come first-served basis.
- Feed-in-tariffs for renewable energy installations up to 30MW, including biomass (incl. municipal solid waste), biogas (incl. landfill/sewerage), small hydro and solar photovoltaic. The feed-in-tariff scheme is financed by an additional 1% of total electricity bills of all electricity consumers (consumers of very small amounts of electricity are exempt).

- Tax exemption equivalent to 100% of the additional capital expenditure incurred for new buildings and upgrading existing buildings of owners of buildings which were awarded Green Building Index (GBI) certificate. The GBI includes criteria related to: energy and water efficiency, indoor environmental quality, sustainable building sites, use of environmentally friendly building materials and resources, and adoption of new technology. Buyers of GBI certified properties are eligible for stamp duty exemption offered once, i.e. to the first owner of a certified building.
- Tax exemption for income derived from trading of Certified Emission Reductions (CERs) for reduction of greenhouse gas emissions.
- Accelerated amortization (40% initial allowance and 20% annual allowances for three years, thus full amount can be written off in three years) for companies that establish facilities to store, treat or dispose-off their wastes on-site or off-site and for companies undertaking waste recycling activities.
- 100% import duty exemption and 50% excise duty exemption on new completely built hybrid cars with engine capacity below 2000cc offered tor franchise holders of hybrid cars

In addition, a Green Technology Financing Scheme (GTFS) was established with a total loan allocation of RM 1.5 billion from the budget 2010. The scheme finances producers of green technology (maximum RM 50 mln per company, tenure up to 15 years) as well as users of green technology (maximum RM 10 mln per company, tenure up to 10 years). Eligible types of technology include for example:

- Green technology in power generation and energy supply management
- Green technology in all energy utilization sectors and in demand side management programs
- Green technologies in construction, maintenance and demolition of buildings
- Green technologies in the management and utilization of water resources (e.g., water supply, rainwater harvesting, waste water treatment)
- Green technologies in waste management and sanitary landfill
- Green technology in transportation infrastructure and vehicles, in particular biofuels and public road transport

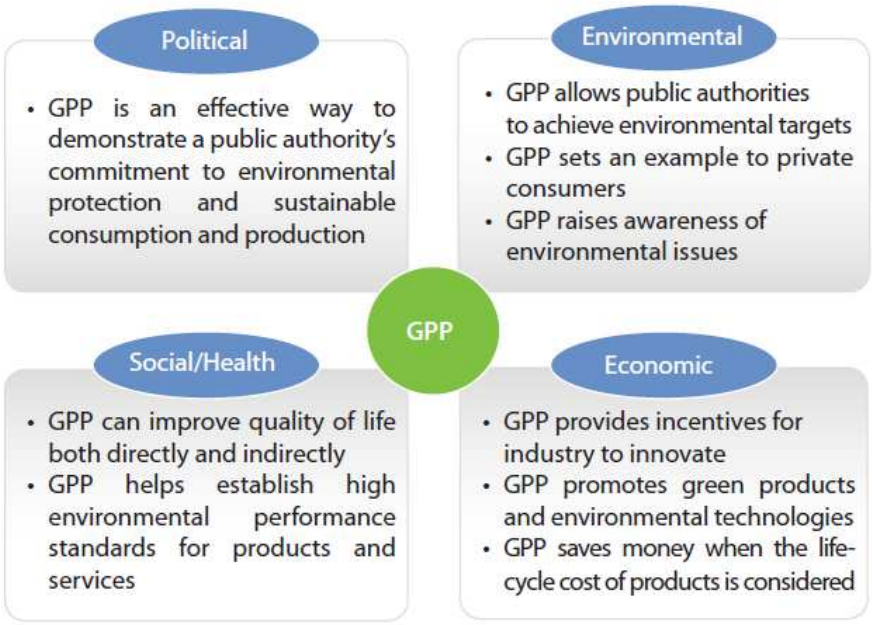
Venture capital in the form of loans is also provided by the Ministry of Finance under certain conditions for start-up and expansion projects in life sciences, biotechnology, green technology, waste-to-wealth technologies ad high precision manufacturing.

Green Public Procurement

We conclude the current section with a brief introduction to Green Public Procurement. Green Public Procurement (GPP) has been defined by the European Union in the Communication (COM (2008) 400) “Public procurement for a better environment” as "a process whereby public authorities seek to procure goods, services and works with a reduced environmental impact throughout their life cycle when compared to goods, services and works with the same primary function that would otherwise be procured.”

The significance and large impact on SCP of green public procurement becomes evident if we consider that public procurement accounts for 15-20% of government expenditure worldwide (Bauer, 2013), whereas much of this expenditure is spent in sectors with significant environmental impacts, such as energy, technology, transport, buildings, food, etc. Also in Europe public authorities are major consumers: they spend approximately 2 trillion euros annually, equivalent to some 19% of the EU’s gross domestic product. By using their purchasing power to choose goods and services with lower impacts on the environment, they can make an important contribution to sustainable consumption and production.

Due to the volume of public procurement, green purchasing can effectively influence the market, i.e., both production and consumption of goods and services. By promoting and using green public procurement, public authorities can thus provide industry with real incentives for developing green technologies, products and services. In some sectors, public purchasers command a large share of the market (e.g. public transport, electricity, construction, health services, education, etc.) and their procurement decisions have thus a considerable impact. The following graph summarizes key benefits of GPP.



Source: EU (2010): GPP Brochure

International GPP practice in Thailand, the Philippines, Singapore and PR China has been discussed in (Bauer, 2013) as part of the current EU Switch Asia funded SCP Policy Project Indonesia. Below we therefore briefly introduce recent European Union experience with GPP.

Implementation of GPP relies on having an agreed set of clear, justifiable, verifiable and ambitious environmental criteria for products, services and works, based on a life-cycle approach and scientific evidence base. In the European Union, technical reports have been elaborated for each relevant product group. These technical reports include the following details for each relevant product group:

- technical characteristics
- key environmental impacts during production, use and end of life of products
- related legislation
- market availability
- cost considerations

Further a differentiation may be made between core and comprehensive GPP criteria, whereas core criteria can be applied with a minimal cost or verification effort, while comprehensive criteria aim for best environmental performance available. All technical reports undergo extensive external and internal consultation before adoption. GPP criteria typically include minimum technical or functional specifications. Selection and award criteria support the process of comparing offers and contract performance clauses. GPP criteria have been developed in the European Union for the following product and service groups:

- Copying and graphic paper
- Cleaning product and services

- Office IT equipment
- Construction
- Transport
- Furniture
- Electricity
- Food and catering services
- Textiles
- Gardening products and services
- Windows, glazed doors and skylights
- Thermal insulation
- Hard floor coverings
- Wall panels
- Combined heat and power
- Road construction and traffic signs
- Street lightning and traffic signals
- Mobile phones
- Indoor lightning
- Waste water infrastructure
- Sanitary tapware

As of September 2013, work is ongoing for new/revised technical reports on GPP criteria for the following product groups:

- Heating systems
- Office buildings
- Imaging equipment
- Toilets
- Medical electrical equipment
- Indoor/outdoor paints and varnishes
- Textiles
- Windows and doors
- Office lightning
- Computers and laptops
- Roads
- Furniture

A number of additional GPP resources for public procurers have been developed and are available at the EU's GPP website along with above mentioned technical reports:

- A "Buying Green!" handbook giving more detailed advice to purchasers on legal and practical aspects of GPP
- A GPP Helpdesk which responds directly to stakeholders enquiries
- A News-Alert featuring the most recent news and events on GPP
- A list of responses to frequently asked questions
- A glossary of key terms and concepts related to GPP
- Links to additional resources, such as studies, project briefs, videos, networks, GPP examples, court cases, legal & policy background, training materials and documents related to new criteria development

2.4 Non-economic incentives

The current subsection will focus on the following type of instruments:

- Eco-labeling
- Information, reporting, rating
- Research, education and training
- Voluntary agreements

Sources of good international practice will be presented along with a number of international case studies.

Eco-labeling

According to the OECD, environmental or eco-labeling can be defined as follows:

“Voluntary granting of labels by a private or public body in order to inform consumers and thereby promote consumer products which are determined to be environmentally more friendly than other functionally and competitively similar products”.

(Source: OECD “Environmental Labelling in OECD Countries”, OECD, 1991, Paris)

Labels can be positive or negative: Whereas positive labels could stand for a superior environmental performance throughout the entire life cycle of a product or just certain stages, an example for a negative label is the well-known “skull with crossbones" displaying poisons.

According to GIZ 2007 “the **primary function** of a ‘positive’ eco-label is to stimulate both supply and demand of products with improved environmental performance.” Giving a stronger focus to the supply side than the OECD definition, positive eco-label can encourage businesses to produce and sell greener, eco-labeled products by providing them with a reliable and often widely known and trusted “brand”, which can be a very valuable marketing tool.

Mode of operation

According to the International Organization of Standardization (ISO) there are three ways information is organized and disclosed to the consumers. ISO categorizes it into type I, type II and type III labeling system, with characteristics presented in the table below:

Features	TYPE I	TYPE II	TYPE III
Type	Voluntary, only be awarded to a certain percentage of producers to make it an "elite" recognition	Voluntary, environmental self-declaration by manufacturers, importers, or distributors	Can be voluntary or mandatory
Information	An indication of the overall environmental prefer-ability of a specific product	An indication of a greener product, usually in single issues	Comprehensive data lists of environmental information of a product
Effectiveness to influence consumer's choice	Easy to compare the environmental performance to other similar products (signaling which one is the better or worse products in the same category)	Incomparable since there is no standards of the type of information disclosed	Consumers have to compare products by themselves through carefully reading the list of information of 2 products (no better or worse category)
Signal	Using a registered logo (standardized)	Using "green vocabulary" such as "green product", or "biodegradable" as a claim	List of data/information (such as nutrition labels on food)
Criteria/ categories	Set by independent organizations, periodically reviewed and revised	No standardized criteria, set by the producers to increase sales in a high level of green consumers area	set by independent bodies
Number of Criteria	Can be single or multiple (based on Life Cycle Analysis)	Mostly single issues	Multiple issues
Verification of compliance	By third parties through a testing & auditing process	No verification	By independent bodies who set the categories
Source: (Rotherham, 1999)			

In addition, eco-labels can differ regarding different issues along the life cycle of products as listed in the table below:

Type	Description
Life-cycle wide	Eco-labeling covering the complete life-cycle is based on an assessment of the environmental impacts (input and output) related to the product throughout its entire life cycle, covering raw material extraction, production, distribution, consumption and end-of-life phase.
Life-cycle wide	Eco-labeling covering the complete life-cycle is based on an assessment of the environmental impacts (input and output) related to the product throughout its entire life cycle, covering raw material extraction, production, distribution, consumption and end-of-life phase.
Life-cycle step specific	Some eco-labels focus on a specific step in the life cycle of a product, e.g. the raw material or agricultural phase. Examples include labels for wood from sustainably managed forests (e.g. the Forest Stewardship Council seal).
Issue-specific	Eco-labeling can also be concerned with specific environmental issues. This can be the content of recycled material in the product, its toxicity, the presence/absence of a particular substance of concern or the capacity for recycling. Examples are recycled paper or clothing free of pesticide residues.
Use-phase efficiency	Eco-labeling based on use-phase efficiency allows consumers to estimate the costs they will bear while using the product, e.g. energy consumption of electric appliances. Energy- and (less so) water efficiency labels have become standard in many countries in recent years.
Source GTZ 2007	

Global distribution of Eco-Labels

Nowadays a great number of Eco-Labels exist internationally. Some well-known ones include:

- EU Eco Label (EU)
- Nordic Swan (Scandinavian countries),

- the Blue Angel (Germany),
- Eco-Mark (Japan),
- Energy Star (USA).

Some sectors have developed certification for production process and corresponding eco-labels to guide the consumer choose green products. The Forestry Stewardship Council (FSC), a not-for-profit organization, allows its name, acronym or logo to be used on timber and forestry products that conform to voluntary environmental and social standards set by the organization – with the designation "FSC Certified". The Marine Stewardship Council (MSC) follows a similar approach for MSC Certified and eco-labeled fisheries products.[2]

Below a couple of international good practices are presented:

EU Eco-Label

In 1992 the legal basis of the EU Ecolabel was set through the EU framework directive 66/2010. As a framework directive needs to be implemented through national law by each EU member country, there are several national laws on Eco-Labels all over Europe.

The Eco-Label was established by the EU "to promote products with a reduced environmental impact during their entire life cycle and to provide consumers with accurate, non-deceptive, science-based information on the environmental impact of products." [3]
The EU Ecolabel is a voluntary scheme, which means that producers, importers and retailers can choose to apply for the label for their products. In fact, hundreds of companies across Europe have already joined because of EU Ecolabel's competitive edge and commitment to the environment. Customers can rely on the logo as every product is monitored by independent experts.

Criteria and Verification: EU Ecolabel criteria consider the whole life cycle of a product, from the extraction of raw materials, through manufacture, packaging, distribution, use and disposal of the product. The criteria have been developed to ensure that the 10 to 20% most environmentally friendly products currently on the market can meet them and have been formulated for 26 non-food and non-medical product groups, which are reviewed every 3–5 years to keep up with technological innovation.

The so-called Competent Bodies are responsible for implementing the EU Ecolabel scheme at the national level and for ensuring that the verification process is carried out in a consistent, neutral and reliable manner by a party independent from the operator being verified, based on international, European or national standards and procedures concerning bodies operating product-certification schemes. They are independent and impartial organizations designated by states of the European Economic Area, within government ministries or outside the ministries. Furthermore they award the EU Ecolabel to products that meet the criteria set for them.

Communication Award: The annual Communication Award recognizes outstanding achievements of Ecolabel license holders in increasing public awareness and knowledge of EU Ecolabel through marketing and promotional campaigns. In fact, the following aspects are evaluated by the jury:

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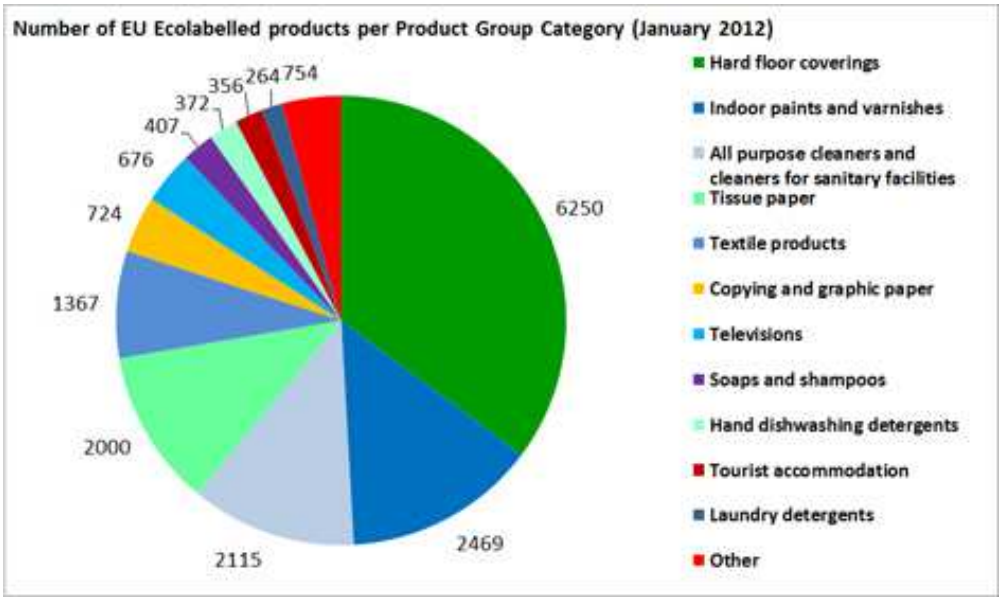
[2] For Further Reading: Consumer Scapegoatism and Limits to Green Consumerism IGES 2012

[3] § 1, EU framework directive 66/2010

- Quality and creativity of the campaign;
- Effectiveness of EU Ecolabel logo use;
- Relevance of promotional activities undertaken;
- Results achieved.

There are currently four categories: B2B, Manufacturer, Service Provider and Special Mention. To see the winners of the last years, please click here.

Facts and Figures: The EU Ecolabel currently covers a huge range of products and services. As of January 2012, 18354 products have been labeled as detailed in the graph below.



Source: http://ec.europa.eu/environment/ecolabel/facts-and-figures.html

The Blue Angel

Another good practice example for eco-labeling is the German "Blue Angel" certification for products and services that have environmentally friendly aspects.

Awarded since 1978 by a Jury consisting of environment and consumer protection groups, industry, unions, trade, media and churches the "Blue Angel" is the oldest eco label in the world, and it covers nowadays over 10.000 products in 80 product categories.

After the introduction of Germany's Blue Angel in 1978 as the first worldwide environmental label, other European and non-European countries followed this example and introduced their own national and supra-regional environmental labels.

Source: http://www.blauer-engel.de/

Great Brand Awareness – the World's Most Renowned Eco-label: Amongst the countless number of labels and logos the Blue Angel eco-label enjoys full consumer confidence in Germany. Surveys by the Federal Environmental Agency show the great brand awareness of the Blue Angel with 76 percent. 39 percent of the German consumers consider the eco-label in their purchasing decisions. This makes the Blue Angel eco-label a reliable guidepost for an ecologically sound purchasing decision. As many as about 1380 licensees use the world's first oldest eco-label "The Blue Angel" for about 11,700 products and benefit from its credibility. Main reasons for the success of the Logo include:

1. The environmental symbol of the United Nations in the form of a blue ring with a laurel wreath and a blue figure with outstretched arms in the middle.
2. The surrounding text specifying the main environmental properties of the product carrying the label, e.g. because energy-saving or low-noise.
3. Indication of the product's central protection goal, e.g. "it saves resources".

The product groups are currently classified into four different protection goals. Since 2009, it has become very easy to tell which kind of positive impact the purchase of a product with a Blue Angel has on health and the environment. The well-known product- and service-related logo was revised to include a specific inscription for each of the key protection goals. A climate-friendly product, for example, is easily identified through the inscription "protects the climate". Furthermore there are "protects the water", "protects the resources" and "protects the environment and the health".

Korean Eco-Labeling

Back in 1992 the Korean Ministry of Environment (MOEK) started to implement the Korea Eco-labeling Program and the Type I KoEco label to identify products of excellent eco-quality and performance. Originally the label was managed by the Korea Environmental Labeling Association (KELA), but in 2005, the Korea Eco-Products Institute (KOECO) took over to manage the criteria setting and certification for the eco-labeling program. In 2009, KOECO and the Korea Institute of Environmental Science and Technology (KIEST) were merged to form the Korea Environmental Industry and Technology Institute (KEITI) which is a semi-governmental entity. At present there are over six thousand certified products across 136 product categories.

There are several other environmental labels that are applied to products in Korea. In 1992, the Ministry of Commerce, Industry and Energy (MOCIE; since 2008 the Ministry of Knowledge Economy) passed the Mandatory Indication of Energy Efficiency Label and Applying MEPS (minimum energy performance standards). In 1997 The Korean Agency for Technology and Standards (KATS) introduced the Good Recycled mark in 1997 to certify

good quality products made of recycled materials. MOEK introduced a further Type III label to certify the reliability of environmental declaration of products (EDP) based on lifecycle assessment in 2001.

Korean approach to Green Public Procurement[4]

The first policy efforts that were made to promote green public procurement in Korea were in 1998 with MOEK's promotion of the Preferential Purchasing of Green Products. Following this, Korea Green Purchasing Network (KGPN) was launched in 1999 under the management of KOECO. It was not until 2004 that national policy was enacted in Korea mandating green public procurement. To meet the criteria of the Green Purchasing Law the products have to meet a set of four parallel criteria to be eligible for green public procurement:

1) have the KoEco label,
2) have the Good Recycled mark,
3) be authorized by the Ministry of Environment, or
4) be authorized by the Ministry of Knowledge Economy.

To link the Korean Eco-Labels with the Green Public Procurement had a mayor effect on the distribution of Eco-Label in the Korean market and promoting green market in general. During the first ten years of the eco-labels, its annual growth rate for licensed products averaged 29%, but during the first three years of the mandate for public procurement to include KoEco labelled products the growth rate averaged 84%. There were 757 licensed products the year before the Green Purchasing Law was enacted in Korea, three years later 4,639 products were licensed.

Information, reporting, rating

BINE Information Service "putting energy research into practice"

One example for a good international practise on providing cutting edge information from research to businesses and public is the BINE Information Service hosted by FIZ Karlsruhe (Leibnitz Institute for information infrastructure) and sponsored by the German Federal Ministry of Economics and Technology.

Experts with a background in engineering and journalism, provide information in an independent, experienced and critical manner. Current information from research and pilot projects is thoroughly researched and prepared specifically for the target market. Brochures, which describe results and experience gathered from research projects, are geared toward those who could potentially apply this information in practice, i.e. developers, planners, consultants, investors, energy suppliers and occupants. These publications, as well as the BINE newsletter, can be subscribed to at no cost. At www.bine.info, the information provided is systematically interconnected with additional information.

The BINE Information Service facilitates the transfer of knowledge and information from energy research to practice, while cooperating closely with companies and institutions which, within the framework of sponsored projects, work to make efficiency technologies and renewable energy sources ready for use. Numerous collaborations with establishments in the

[4] Source: Strengthening Japan's Environmental Cooperation Strategy as a Leader to Promote Green Markets in East Asia, IGES 2011

fields of research, education and practice, as well as with trade press and politicians, serve to accelerate the application of energy research topics.

Furthermore, against an additional payment, professional users get access to a database of incentive programmes of the German Government as well European Union. This database – called "Förderkompass Energie" for professional users: comprehensive, up-to-date information on all relevant support programmes for private, commercial and institutional investors.

EUR-Lex – Access to European Union Law

As a good practise example for a transparent and comprehensive database for existing laws, directives and further legal documents of the European Union, the homepage of EUR-Lex should be mentioned. EUR-Lex provides free access to European Union law and other public domain documents. The website is available in 24 official languages of the European Union. The contents of the site amount to some 2.815.000 documents with texts dating back to 1951. The database is updated daily and every year around 12.000 documents are added. Click here to visit EUR-Lex.

Förderdatenbank

Hosted by the German Ministry for Economy and Technology (BMWi), this database (Förderdatenbank) is a one-stop shop for German businesses offering an overview of the support programmes at European, federal and federal states level.

Education and Awareness Raising

At present half of the world's population are under the age of 25 and most of them are living in developing countries. It is thus obvious that raising the awareness of this generation towards a more sustainable consumption and production pattern would have a key impact. To achieve such an impact education and information are essential. Below key international initiatives on Education for Sustainable Consumption are briefly presented as well as a collection of good practises.

The Marrakech Task Force on Education for Sustainable Consumption (ESC)

The Marrakech Task Force on Education for Sustainable Consumption (ESC) is one of the seven task forces of the Marrakech Process, a global multi-stakeholder process aimed at supporting the implementation of sustainable consumption and production (SCP) and the development of a Global Framework for Action on SCP. The main objective of the Marrakech Task Force on ESC, is to achieve progress in the introduction of sustainable consumption and production (SCP) issues into formal learning processes considering appropriate links to non-formal and informal education. For further information click here. Together with UNEP and other key partners like UNESCO and the Partnership for Education and Research about Responsible Living (PERL), the Task Force developed a series of generic recommendations and guidelines for ESC - targeted at policy-makers and educators - presented in UNEP's Here and Now, Education for Sustainable Consumption - Recommendations and Guidelines.

UNEP/ UNESCO YouthXChange Initiative

In 2001, the United Nations Environment Programme (UNEP) and the United Nations Educational, Scientific and Cultural Organization (UNESCO) joined forces to create the YouthXchange (YXC) Initiative aimed at educating young people on sustainable consumption. This Initiative promotes sustainable consumption and lifestyles among young people (aged 15-24) through education, dialogue, awareness-raising and capacity-building. YouthXchange works with young people, educators, non-governmental organizations, trainers and youth leaders around the world through national partners in more than 45 countries. At the national and local levels, partners conduct YouthXchange training and capacity building activities, supported by YouthXchange publications including the YouthXchange training kit on responsible consumption (a toolkit to train and teach on sustainable lifestyles translated into more than 20 languages) and thematic and regional YouthXchange publications, as well as the bilingual YXC website (www.youthxchange.net). For further information on YouthXchange's activities, please click here: Awareness-raising and Capacity-Building.

International Good practices

There are a great number of international good practices. Consequently, only a small collection of good practices are presented below.

Energy Education for children in Kindergarten "EnerKita"

To give an example for education on sustainable consumption for young children the "Best Practice database of UNHABITAT" presents the EnerKita, which is a project combining environmental education for young children (between 4-6 years) with technological checkups of their respective kindergarten.

Based on generalized pedagogical material addressing the main environmental media like water, energy, heating, electricity etc. they have developed an education programme which is integrated into the day to day work in a number of kindergarten. The programme is mainly focusing on the subjects water and energy, heating and electricity to underline the importance of climate change and drinking water restrictions in the near future. The children learn in an easy and adaptive way how to save energy and water. Experience shows that trained kids act as multipliers at home by telling their parents and practicing what they have learned. This shows that young people can persuade others to follow once they are convinced of something.

Apart from the awareness raising of young children there are also an incentive for the kindergarten itself. The saved budget of the energy savings gives extra money for other educational activities or common activities. Further information on this programme and other examples like the Award Winner "Educating for Sustainability: the Barcelona School Agenda 21 Programme" can be found in the "Best Practice Database of UNHABITAT".

Green Schools in China

Another interesting source of good practices is the already mentioned UNEP's Here and Now, Education for Sustainable Consumption - Recommendations and Guidelines. In the second chapter there is a good number of example e.g. the China's Green Schools Program. In fact, the programme started already back in 1996 and is based on the international environmental management standard ISO 14000 and the Eco-school model in Europe, focuses on environmental education in schools in China.

The program's key focus includes taking a whole-school approach in environmental management and protection, EE curriculum and professional development, and greening school grounds. Schools must undertake a series of steps before applying for Green School awards. Awards are categorized through a staged development process, starting at municipal, provincial and then national levels. Until 2009, 42 000 schools have received at least one level of this award. The Green School Programme focuses on the building of awareness, skills and knowledge for environmental management and protection on school grounds and the wider environment.

Additional information on Green School Awards in Sweden and New Zealand can be found at www.aries.mq.edu.au/projects/whole_school/files/international_review.pdf. Also the US based Green School Alliance provides for similar, interesting examples.

Echt Elly

As good practice for an awareness raising campaign for socio-economically weak members of society outside of the formal educational sector is represented by the "Echt Elly" program. "Echt Elly" is a sustainability reality show, which was created and broadcasted in 2009 by ETC.nl, a regional educational broadcaster in the Netherlands and funded by the Dutch Federal Ministry of Health, Welfare and Sports. The program aims to foster sustainable consumption patterns among viewers, focusing on issues connected to the use of fuel, energy and water consumption, and on sustainability aspects of products, services and waste. The concept was to capitalize on the popularity of the reality-based program format within lower socio-economic target group. The producers involved Elly Lockhorst, a popular entertainer among the target group, who provided audience members with an impression how she deals with sustainable consumption issues in her everyday life. Additional sustainable consumption related learning materials were presented on the ETV.nl internet website. Further information on "Echt Elly" and other interesting examples can be found on the Review on Consumer oriented environmental projects and initiatives – 23 international best practices prepared by the Centre on Sustainable Consumption and Production (CSCP) of UNEP/ Wuppertal Institute.

Voluntary agreements

A voluntary agreement (VA) is a non-economic incentives instrument based on a collaborative approach. Voluntary agreements are either based on bilateral negotiation processes or on unilateral setting of certain standards, guidelines or codes. Players are usually companies, industries or their business associations on one hand, and public authorities or international agencies on the other hand.

Voluntary agreements can vary regarding their degree of liability and interaction between companies and stakeholders. The table below features the three main types of VAs.

Type of agreement	Description
Unilateral commitments made by companies	Interaction: unilateral Goals or environmental improvement programmes are communicated by the industry Liability: low Goals, control, monitoring and reporting a voluntary set by the companies. Non-compliance with these goals might result in damage to the company's image, but no formal sanctions are to be feared.
Agreements between industry and public authorities	Interaction: bilateral Public authorities and (groups) of companies jointly develop VA Liability: diverse – low to high Liability of those agreements varies as there are binding and non-binding VAs. The liability for binding VAs is high, as targets are agreed which usually contain specific control mechanisms and might even involve sanctions.
Voluntary agreement schemes set up by public authorities	Interaction: unilateral Companies are invited to participate on voluntary codes, guidelines or standards developed by a public authority or an international agency. Liability: diverse – low to high Depending on the case, liability can be binding or non-binding.
Source: Based on GIZ 2007 Policy Instruments for Resource Efficiency	

The main objective of the industries to engage in voluntary agreements is to implement certain environmental policy objectives in their own responsibility rather than being forced to act as a result of regulatory solutions enacted by the government. The advantages of voluntary agreements include: higher economic efficiency, flexibility, lower (transaction) costs, time savings, as well as lower amount of governmental resources needed, as Vas are implemented voluntarily by the industries, thus less governmental control is usually needed.

A few International Good Practices and lessons learnt are briefly discussed below.

ACEA Agreement

The ACEA agreement refers to a voluntary agreement between the European Automobile Manufacturers Association (ACEA) and the European Commission to limit the amount of carbon dioxide (CO2) emitted by passenger cars sold in EU. Signed in 1998, it was the first time a VA was used as policy tool by the European Union. The goal of the agreement was to achieve an average emission of 140 g/km of CO2 by 2008 for new cars sold in Europe. This target represented a 25% reduction from the 1995 level of 186 g/km and is equivalent to 5.8 L/100 km or 5.25 L/100 km for petrol and diesel engines respectively. For 2015 the goal was set to 130 g/km of CO2. In fact the agreement was regarded as an important component of the EU climate change strategy. Two examples might illustrate this:

- European Commission signed substantially identical agreements with the Japan Automobile Manufacturers Association (JAMA) and Korea Automobile Manufacturers Association (KAMA).
- Because of the ACEA agreement the transport sector was not included in the European Emission Trading Scheme (ETS).

The announcement of the EU to formulate a directive in the event of non-compliance was widely seen as an implicit commitment of the EU not to intervene in the market with regulations. In fact the European car industry was able to secure most of its key objectives in the negotiations. How to achieve the target was not specified, and the Commission expected achievement mainly by technological developments and consumer demand. Consequently, the car industry had a maximum of freedom to meet their responsibility. However, the average for the whole car market was 153.7 g/km in 2008 which means that the target of 140 g/km had not been achieved. Consequently, the European Commission (EC) announced in late 2006 that it will assume work on a proposal for legally binding measures and limits. In February 2007, the Commission formally acknowledged the failure of the voluntary agreement, and following this, a regulation proposal was introduced by the Commission on 19 December 2007.

The lessons learnt from this example include: Apart from the failure to me the targets, the voluntary agreement was anyway of limited suitability to make a considerable contribution to the emission reduction responsibilities of the EU, as the increase of CO2 emissions from traffic could be reduced only slightly. In addition, the benevolent treatment of the car industry compared with the far higher emission reduction goals of other industries, e.g., the energy sector, was an unjustifiable privilege. Note that originally the European Parliament demanded a reduction of 90 g/km.

Forest Law Enforcement, Governance and Trade (FLEGT)

An interesting example for an international approach is the use of VAs within the EU FLEGT Action Plan. The FLEGT Voluntary Partnership Agreements (VPAs) are bilateral agreements between the European Union and timber exporting countries, which aim to guarantee that the wood exported to the EU is from legal sources and to support partner countries in improving their own regulation and governance of the sector. On 3 March 2013 the EU Timber Regulation came into force and prohibits operators in Europe from placing illegally harvested timber and products derived from illegal timber on the EU market.

The VPAs and the EU Timber Regulation are part of the European Union´s FLEGT Action Plan, which was published in November 2003. A country that has a VPA and an operational licensing system can issue FLEGT licenses for legally produced timber and timber products. All timber and timber products with a FLEGT license automatically comply with the EU Timber Regulation. Several countries (e.g. Indonesia, Malaysia, Vietnam, Congo) have negotiated a Voluntary Partnership Agreement with the EU, but FLEGT-licensed timber is not yet being exported to European countries. Until FLEGT licenses are available, operators will require evidence of compliance with national legislation. Apart from the Regulation and the VPA, another important part of the of the Action Plan are the following measures, which focus on seven broad areas:

- Support to timber exporting countries, including action to promote equitable solutions to the illegal logging problem.
- Activities to promote trade in legal timber, including action to develop and implement Voluntary Partnership Agreements between the EU and timber exporting countries.
- Promoting public procurement policies, including action to guide contracting authorities on how to deal with legality when specifying timber in procurement procedures.
- Support for private sector initiatives, including action to encourage private sector initiatives for good practice in the forest sector, including the use of voluntary codes of conduct for private companies to source legal timber.
- Safeguards for financing and investment, including action to encourage banks and financial institutions investing in the forest sector to develop due care procedures when granting credits.

- Use of existing legislative instruments or adoption of new legislation to support the Plan, including the EU Timber Regulation.
- Addressing the problem of conflict timber.

Current progress in implementing FLEGT in Indonesia can be summarized as follows:

The original VPA text and annexes were initialed in May 2011 and the VPA is expected to be signed on the 30th September 2013. After signing the VPA, it will only become an active treaty, once it has been ratified by Indonesia as well the EU, a process which is expected to take at least 3 months in the EU, and a similar period of time in Indonesia. Once the VPAs have been ratified by the two parties, they have to decide when the national timber legality assurance scheme can be considered operational. When this happens all timber under the SVLK must use the FLEGT license when entering Europe. Conversely after that date any SVLK timber shipped from Indonesia into Europe without a FLEGT license will not be allowed into Europe by the border control authorities. In order to determine the date for FLEGT licensing, the EU and Indonesia are in the process of preparing a "Joint Assessment" of the operationalization of the SVLK. It is at present not yet determined when FLEGT licensing might start. Due to the fact, that the process is still under way, it is at present of course not yet possible to regard FLEGT/ VPA as a “good practice”. But the process seems to be on a good way; the implementation in Indonesia is more advanced than in other VPA countries so far and the progress is significant despite certain difficulties.

2.5 Strengths and weaknesses of instruments

The following tables summarize important strengths and weaknesses of different SCP policy instruments.

Command and control instruments	
Strengths	**Weaknesses**
Norms and standards	
• High level of effectiveness / certainty in achieving policy objectives • Clarity and predictability for businesses • Fairness on national level as all companies are treated equally • Relatively quick and easy to formulate and enact, e.g. based on internationally defined guidelines/standards • Long record of experience and lessons learnt, especially in OECD countries	• Targets are typically more costly to achieve as compared to using economic instruments • Low long term innovation incentive, as companies do not need to go beyond a set standard • Impacts on competitiveness and international trade, if norms and standards are stricter than abroad • BAT standards require constant updating of technology information • Possible strong industry opposition
Control and enforcement	
• High level of effectiveness / certainty in achieving policy objectives • Increases compliance with environmental regulations • Allows for equal assessment of companies and for equal application of laws and standards, thus supports free and just competition • Enables identification and elimination of production inefficiencies • Enables identification of companies that require special enforcement attention or external support • Enables monitoring and collection of emission data needed for better policy-making	• Requires a high level of technical expertise of public officials / inspectors • Risk of corruption, especially if salaries of public inspectors are inadequate • Costly instruments, as significant manpower is needed to properly implement control and enforcement • Control and enforcement approaches may have a negative image and may foster an understanding of confrontation between public and private sector • May render cooperative and advisory approaches between public and private sector more difficult • Possible strong industry opposition

Economic instruments	
Strengths	**Weaknesses**
Environmental taxes, fees, charges	
• Eco-taxes can directly address the failure of markets to take environmental impacts into account by incorporating these impacts into prices • Policy targets can typically be achieved at lower costs as compared to command and control instruments • Leaves consumers and businesses the flexibility to determine how best to reduce their environmental "footprint" • Promote long term resource efficiency and pollution reduction incentives • Generate government revenue which can be used for reducing other taxes, increasing government revenues, or, for financing environmental policy priorities	• Eco-tax rates need to be set high enough to trigger investments that help reduce tax payments and decrease pollution or resource use. In practice, eco-taxes are often set below such levels, resulting in moderate/ low effects on environmental policy targets • May decrease international competitiveness of taxed companies • Inappropriate tax design may trigger corruption • Taxes may hit small companies or the poor disproportionally as they may have fewer options to switch to less polluting or more resource efficient alternatives than large companies • Possible strong industry and political opposition
Public environmental expenditure, subsidies	
• High level of effectiveness / certainty in achieving policy objectives. • High level of acceptance from private/public sector. • May trigger innovation & increased competitiveness • May enable new industrial sectors and employment: recycling/renewables/energy efficiency industries etc. • Many investments required by modern environmental policy are unfit for commercial financing, especially when commercial lending is expensive (high interest, high collateral requirements, short loan duration). Public environmental finance can bridge such gaps. • Subsidy schemes can catalyze the development of commercial green financial products.	• Subsidies need to be financed, i.e. they may direct public expenditure away from other important policy areas • Excessive subsidies may distort markets • Subsidies should not undermine the polluter pays principle and the user pays principle • The provision of subsidies may trigger corruption • Although subsidies should be given for specific purposes and a limited time only, in practice subsidy schemes tend to prevail even when not needed anymore • Public environmental expenditure schemes should not violate public finance policy
Green procurement	
• May have a large environmental and economic impact by enabling greener products and services • May enable new industrial companies/sectors and create new jobs • Can be easily and cost-efficiently implemented • Can influence and modify entire supply chains • Can increase innovation and competitiveness	• May initially result in higher costs • Procurement officers usually have limited capacity and no training in formulating green tender criteria • Standardized and reliable information needs to be available to determine whether a product/service is "green" or not • Green products/services need to be available on the market

Non-economic instruments	
Strengths	**Weaknesses**
Research & development, education, training	
• R&D can lead to new technological solutions and/or to improve efficiency in existing production processes • Highly capable human resources will likely also provide for additional/new improvements in the future • Helps fostering long term efforts and results • Reduces dependency on external skills/expertise	• R&D does not always result in improvements • R&D, training and education should be seen as longer term investments, usually no quick wins • Success of training and education efforts depends on the quality of the existing educational system (qualified teachers, budgets, curricula needed, etc.)
Voluntary agreements	
• Provide greater flexibility than regulation • Are usually cheaper than regulation • Encourage proactive actors in industry • Improve government-industry dialogue • Are often preferred by industry over regulation	• Difficult to achieve nation-/industry-wide results (problem of free riders, i.e. negligent/poor performers) • Difficult to apply in areas where business have little self-interest • Loss of time in case voluntary agreements fail
Eco-labeling	
• Rewards proactive, ambitious companies • Contribute to raising environmental awareness • Can help mainstreaming best available technologies • Helps producers green their corporate image • Demand driven instrument: consumers decide what they buy; eco-label criteria need to reflect this fact • Negotiation of labeling criteria usually helps government-industry dialogue and stakeholder participation	• Many different labels may lead to consumer confusion • Potential trade concerns if labeling leads to the discrimination of imported products • No continuous innovation incentive • Effectiveness and impact difficult to assess • Testing requires advanced technology, infrastructure and expertise
Information provision, reporting	
• Allows for preparing and implementing better policies or concrete solutions to a given issue • Informed markets/companies attract more investment • Informed consumers make better choices • Information provision lowers transaction costs • Promotion of stakeholder engagement • Supports education/training, builds human capacity	• No direct environmental effect/impact • Information may be incorrect or inappropriate • Information may not be shared/disseminated freely • Information may not be up to date
Source: Authors assessment, partially based on GTZ et al. 2006	

3 REVIEW OF POLICY FRAMEWORK

SCP in Indonesia's National Development Policies

Implementation of sustainable development is applied in the **Indonesian 1945 Constitution**. In the fourth amendment to the 1945 Constitution at 2002, it was added in article 33 paragraph (4), which reads: *" The organization of the national economy shall be based on economic democracy that upholds the principles of solidarity, efficiency along with fairness, sustainability, keeping the environment in perspective, self-sufficiency, and that is concerned as well with balanced progress and with the unity of the national economy"*. This amendment also emphasized fundamental human rights to enjoy a good and healthy environment as stated in article 28H paragraph (1) : *"Each person has a right to a life of well-being in body and mind, to a place to dwell, to enjoy a good and healthy environment, and to receive medical care".*

At international level, Government of Indonesia (GOI) has signed the **Millennium Declaration of 2000** along with 189 other countries of United Nations members, and put the eight **Millennium Development Goals** (MDGs), which one of the goals is Ensuring Environmental Sustainability (MDG 7), as key reference of the GOI in the spectrum of development programming to development implementation in Indonesia.

To achieve the development goals as mandated in the Indonesian 1945 Constitution and with further mainstreaming the MDGs, **National Development Planning** act 25/2004 was issued. In accordance to article 4 of this act, Indonesia's commitment to achieve such a goal is reflected in its Long-term National Planning which has been developed as a continuation and renewal of earlier stages of development planning in Indonesia. This long term plan involves conducting institutional restructuring while simultaneously keeping the nation in pace with other nations. **National Long-term Development Plan** act 17/2007 further describes the framework for plan's 20-year span within year 2005-2025 period (**RPJPN 2005-2025**) and the road map to sustainable development is then carried out through a series of five years national plan named as **Medium-term National Planning** (RPJMN) as refer to President Regulation (PERPRES) 5/2010. To ensure that national development plans are accomplished with achieving the expected goals, a **Presidential Working Unit for Development Monitoring and Oversight** (UKP4) is established through PERPRES 54/2009. This unit will directly report to the President to support monitoring and controlling the implementation of national development program.

The (current) 2nd **National Medium-term Development Plan (RPJMN 2010-2014)** forms the basis for ministries and government agencies when formulating their respective **Strategic Plans** (Renstra-KL). Regional governments also must take this medium term plan into account when formulating or adjusting their respective regional development plans. For the implementation of the National Long Term Development Plan, the RPJMN is to be further elaborated into the **Annual Government Work Plan** (RKP) that will then become the basis for formulating the **Draft Government Budge**t (RAPBN).

The RPJMN 2010-2014 has given strategic substance to the sustainable development plan in the second five years development period (2010-2014). The policy directions as output of RPJMN should reflect the mainstreaming principle of sustainable development. Under such mainstreaming principles, the medium-term development will strengthen endeavors to overcome the various faced problems. One out of ten identified challenges to national development in RPJMN 2010-2014 is how economic growth will not damage the natural environment since environmental damage will lead to unsustainable economic growth. GOI has acknowledged that ineffective management of natural resources will result in the rapid depletion of

resources and could easily lead to the recurrence of a food and energy crisis which at the end will result in the increase in the cost of living and a reduction of the quality of life.

The first RPJMN 2004-2009 has determined the triple-track development strategy with focus on economic growth *("pro-growth")*, poverty alleviation *("pro-poor"),* and employment opportunities *("pro-job")*. This strategy has been expanded to fourth-track strategy by combining with environmental protection *("pro-environment")* that has been addressed through the National **Action Plan addressing Climate Change** (NAP, 2007), to create the basis of sustainable development in RPJMN 2010-2014. The priority economic sectors in the implementation of the sustainable development strategy through the National Action Plan includes Agriculture, Forestry, Water resource, Marine and Fisheries, Energy, Mining, Processing & Manufacture, Public works, Tourism and Population (quantity, quality, and mobility of distribution)

To formulate and to elaborate the GOI's vision and mission for 2010-2014 in a more operational manner, a number of priority programs which can be more easily implemented with measurable output, are established which aimed to address the challenges faced by the nation in the coming period. Most of the resources and policies will then be prioritized to ensure the implementation of the eleven national priorities where sustainable development is included in the priority program known as "environment and natural disasters". This program emphasize that conservation and utilization of the natural environment that supports sustainable economic growth and increased welfare of the people, should be accompanied by the control and management of disaster risks for anticipating the impacts of climate change. Thereby, the action program on the environment and management of natural disasters comprise the Climate Change and Controlling Degradation of the Environment as the core substances. To coordinate the implementation of the climate change and to strengthen the position of Indonesia in international forums in controlling climate change, the GOI established the **National Council on Climate Change** (DNPI) through PERPRES 46/2008.

In the context of overcoming the impact of global warming for attaining sustainable development in 2009, at the G-20 Summit in Pittsburgh and the International Convention on Climate Change in Copenhagen, Indonesia offered a commitment to mitigate the impact of climate change in the form of reducing its greenhouse gas (GHG) emissions of 26% by 2020 by Indonesia's own resources, and a reduction of 41% with international help, both refer to *Business as Usual* (BAU) baseline. Efforts to reduce GHG emissions are mainly focused on activities related to forests, peat lands, waste and energy, that are supported by policy steps in various sectors and by fiscal policy. As the follow-up of this commitment, PERPRES 61/2011 was issued which consist of National Action Plan to reduce the GHG, namely RAN-GRK. RAN-GRK is the guidance for ministries and agencies on developing planning, implementation, monitoring and evaluation of GHG reduction plans which also should be applied to regional and local levels on developing regional/local GHG reduction plan (RAD-GRK). In year 2012, 33 RAD-GRK (except West Papua which under the process of Governor Regulation) have been completed. To secure the implementation of RAD-GRK, mechanism of Monitoring, Evaluation and Reporting (PEP) RAN/RAD-GRK has been developed including finalization of PEP Guide and Technical Direction which involved climate change team, related ministry/agency, university as well as other development partners. The **National Center of National Action Plan for Greenhouse Gas reduction** (RAN-GRK Secretariat) has been established to improve the accessibility of information and technical assistance related to RAN-GRK.

National GHG inventory are measured, reported and verified as part of Climate Change National Communication Report, mandatory for the country that ratified the United Nations Framework Convention on Climate Change. In regard to this requirement, PERPRES 71/2011 was issued to establish the parameter of GHG, to identify and analyze the GHG

emission and its reduction including the carbon stock status as the input for mitigation of the climate change.

Learned from world experienced *"Second Great Depression"* in year 2008 that Indonesia can overcome the crisis and meet the challenge, GOI established a support to the RPJPN and RPJMN by developing a master plan to accelerate and expand the Indonesian economic development, namely long-term **Economic Master Plan** (MP3EI 2011-2025) through PERPRES 32/2011. The MP3EI functions as a complementary working document to strengthen the existing development plans. Six economic corridors as center of growth are identified with their specific economic drivers, e.g Sumatra (crops processing), Java (industrial and services), Bali (tourism), Kalimantan (mining), Sulawesi (agriculture and fisheries), and Papua (natural resources). The clear inclusion of sustainability consideration such as environmental protection as well as poverty alleviation are under development by MOE and BAPPENAS to be put into one section in the next revision of MP3EI document. At current MP3EI implementation, sustainable development has been well adopted e.g in the strategic plan of JABODETABEK metropolitan priority area (JABODETABEK MPA) which involves Jakarta as capital city and its surrounding cities such as Bogor, Depok, Tangerang, and Bekasi in order to transform its area to be more attractive and suitable for direct investment and industrial development. Development concept of the JABODETABEK MPA toward year 2030 consist of three pillars: Growth, High Quality of Life and Eco-friendliness which obviously reflected the implementation of sustainable development.

Spatial Management act 26/2007 was established to develop national spatial which are safe, comfortable, productive and sustainable through the harmony between natural and artificial environment. In this context, Government Regulation PP 26/2008 regarding **National Spatial Plan** (RTRWN) was issued. **Ecological Footprint** study commenced by Directorate General of Spatial Planning of Ministry of Public Work in 2010 noted that some region in Indonesia such as Island of Java and the Island of Bali have used up their natural resources beyond its carrying capacity (bio-capacity minus ecological footprint). Further study in 2012 regarding Eco-logical Footprint at two urban **National Strategic Areas** (KSN) established in PP 26/2008: KSN Bandung Basin (West Java) and KSN Gerbang Kertasusila (East Java) has shown that carrying capacity in both KSNs are in deficit as the impact of *urban sprawl*. Development of a city such as the concept of *Compact City* which uses more efficient natural resources (less ecological foot print) is recommended. In general, the study is expected to give valuable inputs for a better spatial management policy development in the future.

Banking is the important support for implementation of sustainable development plans. In regards to Green Banking policy, Central Bank of Indonesia (CBI) has issued CBI regulation 7/2/PBI/2005 concerning Asset Quality Rating for Commercial Bank. Article 11 letter (e) of this regulation has linked the business prospect assessment as basis for credit quality qualification with requirement of any debtor to take environmental management actions under the applicable laws and regulations. More specific regulation applied to general bank is stipulated in CBI regulation 14/15/PBI/2012 and for Syariah Bank is stipulated in CBI regulation 13/13/2011. Sustainability requirement for Micro, Small and Medium Enterprise (MSME) is also considered in Government Regulation PP 17/2013, especially in article 36 paragraph (6) related to environment criteria for getting business permit of the MSME. Currently, banking in Indonesia has translated the environmental requirement for bank credit assessment as the compliance to acceptable environmental performance rating of **PROPER** as stipulated in Circulate Letter (SEBI) 7/3/DPNP issued by January 31, 2005.

In the area of government auditing, The Audit Board of Republic Indonesia (BPK) as member of International Organization of Supreme Audit Institutions (INTOSAI), plays role as member of Steering Committee in The **Working Group on Environmental Auditing** (WGEA). This working group aims to improve the use of audit mandate and audit instruments in the field of environmental protection policies. Recently, BPK has considered to not only auditing the fi-

nancial aspect but also the environmental audit, in particular for coal and mining area which intended to link their *Clear and Clean* (CnC) status to operational permits renewal.

In conjunction with Rio+20 summit 2012, Indonesia through the MOE has launched the **10-years Frame Work of Sustainable Consumption and Production** (SCP) in June 2013. The proposed *Quick Wins* program includes Green Building, Green Procurement, Green Industry, and Green Tourism. The 10-years frame work of SCP contains of the road-map to main-streaming the SCP in national development agenda and will be incorporated into RPJMN 2015 – 2019.

GOI has embraced worldwide recognition that current modalities of development are not sustainable, and the way forward is a transition to a Green Economy, therefore green growth has received the highest level of commitment in Indonesia. Indonesia appreciates that this transition is imperative to achieving its key priorities of economic growth, greater social equity and inclusion, and sustainable use of natural resources. The entry point of GOI for realizing Indonesia's ambitions for sustainable development is by promoting and integrating Green Economy into national development strategies and plans, with a particular focus on the Mid-term National Development Strategy (RPJMN) as refer to **Indonesian Roundtable on Greening the National Development Plan** conducted in June 2013 by GOI in partnership with UNDP, UNEP and UNORCID. In addition, GOI has taken an initiative to develop further plans after the MDG period completion in year 2015 (Post-2015 Development Agenda), by establishing a National Committee to formulate the post-2015 development vision and agenda through KEPRES 29/2012.

SCP in Indonesia Sector Policies

About 60% of Indonesia's GHG emissions come from the Land Use, **Land-Use and Change Forestry** (LULUCF) sector. Forest and peat land fire in Indonesia has also contributed significantly to the global carbon emission (NAP, 2007). Tackling this crucial environmental issue which could drive the increase of global temperature, GOI and Government of Norway (GON) signed a letter of intent (LoI) regarding "Cooperation on reducing greenhouse gas emissions from deforestation and forest degradation" in May 2010. The main purpose of this LoI is to assure a significant **Reduction Emissions from Deforestation and Forest Degradation** as well as peat land conversion in Indonesia, known as REDD+. Indonesian REDD+ Task Force was assembled in 2010 through KEPRES 19/2010 and followed by issuance of PERPRES 62/2013 regarding the establishment of Indonesian REDD+ Agency to manage reduction of GHG emission from deforestation and forest and peat land degradation. The Indonesian REDD+ Task Force has also accomplished the **REDD+ National Strategy** as a platform for **Indonesian REDD+ Agency** to proceed the efforts to rehabilitate the integrity of ecosystem functions, including the social and economic functions of land and forests within the framework of Indonesia's sustainable development which actually goes far beyond merely producing carbon credits to assist in global climate change mitigation. To harmonize and to balance the social, economy and cultural development with the on-going effort of REDD+, Presidential Instruction INPRES 10/2011 was issued in order to postpone the new permit issuance and to improve the management of forestry and peat land utilization.

Indonesia economic growth is contributed by the industry as one of the driving force. High investment in the industrial sector and domestic consumption supported the significant growth of manufacturing industries, e.g : contribution of non−oil and gas manufacturing sector in 2012 to the national GDP is the highest compared to other sectors. National industrial development as stated in PERPRES 28/2008 regarding **National Industrial Policy** (NIP) gives the pathway to reach the vision of become Tough Industrial State in 2025. To strengthen the competitiveness with balance ability between SME and larger industry while advance technology is the forefront of market development and creation are the core substances of the

plan. The sustainability development safeguard of the expected robust growth from industrial sectors is structured into a strategy map which accommodates the strategic outcome of increased ability of innovation and industrial technology capability which energy-saving and environmentally friendly as stipulated in the NIP. *Green Growth* strategy as declared in **Manila Declaration** on Green Industry (2009) that Indonesia already signed, is translated to Green Industry concept with strategic approach includes Cleaner Production, 3R *(Reduce-Reuse-Recycle)* and Low Carbon/CO2 Emission Reduction. Ozone depleting producing and producing goods that use ozone depleting is also prohibited through regulation of the MOI PERMEN 33/2007. Non-ODS material (after inspected by recommended surveyor) may use the non-ODS logo on the product in accordance to regulation of the PERMEN MOI 86/2008. Some of ODS in prohibited to import and some of them are still allowed with certain condition as refer to regulation of PERMEN MOT 3/2012.

National Energy Policy was established through PERPRES 5/2006 to secure the energy supply and to support sustainable development. It sets the target for elasticity (ratio of energy consumption to economic growth) less than 1 by 2025. The primary energy mix domination is shifted from oil to coal and natural gas, while diversification to new and renewable energy such as geothermal, hydro, biomass etc. are increased. All of those details are included in **National Energy Management** (PEN) Blueprint 2005-2025 issued by MEMR. Energy development based on BaU and optimized scenarios are analyzed resulted the figure, e.g : the optimized energy mix of oil will reduce from 49% (2005) to 10 % (2020) and geothermal from 1 % (2005) to 5 % (2020). The energy policy has considered the internalization of external (environmental) cost since the economic energy price is defined as the cost of production per unit energy including environmental cost and margin, under a safeguarding time for the poor. Requirement to use environmental friendly technology with compliance to applicable environmental regulation for utilization of energy is clearly mentioned in article 8 of **Energy Law** 30/2007. This energy law has specified the development of **National Energy Council** (DEN) which established with PERPRES 26/2008. The DEN has been mandated to design, formulate and monitor implementation of the energy policy, to develop national energy general program and to establish the response to energy crisis and emergency situation. Energy conservation responsibility among stakeholders; government, private sectors, community is stipulated in Government Regulation - PP 70/2009 which also specifies the mandatory requirement to conduct energy management and appointment of energy manager for energy user greater than 6000 tons of oil equivalent per year. This regulation also included disincentive consequences for the ignorance of requirement such as warning letter, media exposed, penalty as well as reduction of energy supply possibility. The **National Energy Conservation Development Program** (RIKEN 2005-2025) focuses on demand side management, standardization and energy savings labeling, partnership programs, energy manager, incentives and budgeting, and other regulations. Different targets of energy saving has been established, e.g : 10 % saving of subsidized oil (INPRES 13/2011, supported by PERMEN MEMR 12/2012), 20% saving of electricity (PERMEN MEMR 13/2012), 10% saving of water (INPRES 13/2011, supported by PERMEN MEMR 15/2012). Recent regulation regarding biofuel (PERMEN MEMR 25/2013) has asked the end users, traders and electricity suppliers who use oil, to gradually use the biofuel. The obligation to mix the oil and biofuel according to this regulation, has supported the energy diversification and in the same time creates opportunity to reduce the subsidy for oil. The gradually shifting of oil to biodiesel as refer to this regulation applied differently for different usage, e.g: industrial and commercial need to increase the biodiesel minimum portion from 5 % (2013) to 25 % (2025), power plant from 7.5 % (2013) to 30% (2025), non-PSO transportation from 3% (2013) to 25% and PSO transportation from 10% (2013) to 25% (2025).

Water is commodity that will become increasingly more scarce and valuable. Act 7/2004 regarding the Water Resources, underlined that people has the rights to get the water for their healthy, clean and productive life, while in the same time, its social, environmental and economic functions need to be managed in a harmony. This concern further addressed by de-

veloping **National Policy of Water Resources** or JAKNAS SDA with issuance of PERPRES 13/2011. This national policy is outcome of **National Council of Water Resources** (DNSDA) who took the responsibility based on PERPRES 12/2008. One of the main problem on water resources management is the pressure from rapid development, economic growth and the increase of population which impacted the changes of land function and has caused its reduction of water absorption ability. The positive thing, potential of water resources is still abundant, however they are not distributed equitably. JAKNAS SDA aimed to give a guidance of water resources management for year 2011-2030 time frame. Some support regulation to the JAKNAS SDA are also provided, e.g: Government regulation PP 42/2008 regarding water sources management; PP 43/2008 (ground water); KEPRES 26/2011 (ground water basin)

Beside the intention of using less material and resources to keep growing the welfare, waste management is an important part of sustainable development. The most recent regulation on environmental protection in Indonesia is **Environmental act 32/2009**. This law has strengthen the environmental protection and management by making the environmental permit (*izin lingkungan*) as mandatory to get the business permit. Incentive/disincentive and funding instrument are also provided including the obligation to provide reserved fund for environment contamination recovery. The regional and local level government will get more environmental **Special Allocation Fund** (DAK) if they can show a good performance in the area of environmental protection and management. On the contrary, stronger punishment is also barricades this law with penalty up to 15 bio rupiah and max 15 years in prison if the violation occurs. In addition to environmental law, regulation regarding the environmental has covered the various area with some related regulations, e.g : municipal waste treatment and (UU 18/2008, PP 81/2012, PERMEN LH 13/2012); water protection and management (PP 82/2001, PERMEN LH 01/2010); hazardous material management (PP 74/2001, PERPRES 33/2005); hazardous waste management (PP 18/1999, PERMEN LH 30/2009); protection and management of bio-diversity (UU 5/1990, PERMEN LH 29/2009); protection and management of land cover (PP 150/2000, PP 04/2001); atmosphere and air preservation (PP 41/1999); sea protection and management (PP 19/1999); etc.

4 REVIEW OF EXISTING INSTRUMENTS

One of the first fundamental regulation regarding environmental in Indonesia is act 4/1982 regarding **Basic Provision of Environmental Management**. This act is an important driver for GOI to challenge the *"status-quo"* where no environmental regulation and institution are in place, and in the same time, the concern on environmental issues from government as well as industry were still very low. At this point, GOI has given stronger intervention to improve the environment while keeping the growth of welfare. The environmental protection efforts in this period of time was centralized and did not gain more participation from the stakeholders. The effort on environmental problem solving focused to *"end-of-pipe"* solution to meet the pre-determined waste quality standard. One of the advantages, more established regulatory controls and enforcement system has been developed to build the floor for environmental protection in the future. Environmental Management act 23/1997 was issued to strengthen the compliance to environmental regulation, and in the same time has opened wider the opportunity for stakeholders involvement.

GOI has acknowledged that single mandatory **Command and Control** measures will not sufficient to response the increase of environmental problems. Policies as well as market failures such as subsidized growth, distorted energy prices, no pollution cost are main causes of the current environmental problems. For this reason, GOI has applied policies and instruments which integrate the mandatory approach, partnerships and market-based & economic instruments. The use of those *mix-instruments* has now gained the momentum with the endorsement of the new environmental act no 32/2009. This Act has explicitly accommodated the economic instrument as one of the keys of sound environmental management.

Shifting the environmental management of GOI from *"end of pipe"* toward *"pollution prevention"* approach will need one of the key features for the effectiveness that is stakeholder involvement in both planning process and implementation. Top-down approach which dominated command and control schemes need to be balanced with the initiatives to encourage stakeholder's participation. Responding to this concern, GOI established the policy initiatives which include incentive and disincentive schemes, both for non-economic and economic instruments.

Non-economic incentive initiatives has been developed in term of recognition, publication, technical facilitation, etc. Some of these programs are currently running, e.g: Adipura (Clean and Green Cities award), Kalpataru (individual/group/company for their dedication to the environmental management practices), PROPER (Business Environmental Performance Rating), ICPC (Indonesian Cleaner Production Centre), Langit Biru (Blue Sky) and Green Production.

Economic instruments (EIs) in generic term can be defined as an instrument designed to affect production decisions either through pricing mechanisms or by changing the economic attractiveness of specific actions. In the context of environmental management, economic instrument is designed to narrow the gap between what constitute as private costs and social costs. The current economic instrument for environmental management in Indonesia, falls into category of *Fiscal Instruments*, *Financing Instruments* and *Market Instruments*. Implemented initiatives of fiscal policy are recently related to the application of environmental tax, levy and subsidy. One of popular fiscal policy instruments which is currently being implemented by cooperation among local governments is *Payment for Environmental Services* (PES). Implemented financing instruments comprises soft loans, grants and other alternatives source of fund. Market instruments includes *performance bond* as one that has been implemented mainly in oil and gas and mining, while Deposit Refund System (DRS) is now under consideration to implement.

4.1 Command and control instruments

The **Command and Control** approach in area of environmental protection and management in Indonesia is provided by Environmental act 32/2009 (Environmental Protection and Management act). The instrument to protect and manage the environment are developed with broaden scope to cover the entire business activities and their environmental aspects. In the last fifteen years, environmental regulations have been developed intensively and produced in many different sectors. However, the biggest part from them and contains more applicable requirement to all sectors, are issued by MOE. Below are the list of regulation under MOE (except UU, PP, PERPRES AND KEPRES), grouped into several clusters of category.

Instruments of Environmental Protection and Management	Environmental Protection and Management Planning • UU 32/2009 • PERMEN 17/2009, PERMEN 110/2003, PERMEN 28/2009 Study on Strategic Environmental • PERMEN 9/2011 Spatial Plan • UU 26/2009 • PERMEN 17/2009 Environmental Impact Assessment (AMDAL) • PP 27/2012 • KK BAPEDAL 56/1994, KK BAPEDAL Kep-299/11/1996 • KK BAPEDAL Kep-124/12/1997, KK BAPEDAL 8/2000 • KEPMEN 4/2000, KEPMEN 5/2000, KEPMEN 49/2004 • PERMEN 5/2008, PERMEN 24/2009, PERMEN 25/2009 • PERMEN 7/2010, PERMEN 15/2010, PERMEN 5/2012 • PERMEN 17/2012 Environmental Document • KEPMEN 45/2005 • PERMEN 16/2012 Standard Quality of Environment • *Standard Quality of Water and Waste water* • KEPMEN KEP-51/MENLH/10/1995, • KEPMEN KEP-52/MENLH/10/1995 • KEPMEN KEP-58/MENLH/10/1995 • KEPMEN 112/2003, KEPMEN 122/2004, • KEPMEN 202/2004, • PERMEN 2/2006, PERMEN 4/2006, PERMEN 9/2006 • PERMEN 10/2006, PERMEN 4/2007, PERMEN 5/2007 • PERMEN 6/2007, PERMEN 8/2007, PERMEN 9/2007 • PERMEN 10/2007, PERMEN 12/2008, PERMEN 13/2008 • PERMEN 14/2008, PERMEN 15/2008, PERMEN 16/2008 • PERMEN 8/2009, PERMEN 9/2009, PERMEN 10/2009 • PERMEN 11/2009, PERMEN 21/2009, PERMEN 34/2009 • PERMEN 3/2010, PERMEN 4/2010, PERMEN 5/2010 • PERMEN 6/2010, PERMEN 19/2010, PERMEN 2/2011 • *Standard Quality of Sea Water* • KEPMEN 51/2004, KEPMEN 179/2004 • *Standard Quality of Air* • KEPMEN KEP-13/MENLH/03/1995, • KEPMEN KEP-48/MENLH/11/1996 • KEPMEN KEP-49/MENLH/11/1996 • KEPMEN KEP-50/MENLH/11/1996 • KEPMEN KEP-45/MENLH/10/1997 • PERMEN 6/2006, PERMEN 7/2007, PERMEN 17/2008 • PERMEN 18/2008, PERMEN 21/2008, PERMEN 4/2009 • PERMEN 7/2009, PERMEN 13/2009, PERMEN 10/2012 • PERMEN 7/2012, PERMEN 23/2012 • *Basic Criteria of Environmental Damage* • KEPMEN Kep-43/MENLH/10/1996 • KEPMEN 4/2001, KEPMEN 200/2004, KEPMEN 201/2004 • PERMEN 7/2006

	Permits • PP 27/2012 • PERMEN 12/2006, PERMEN 18/2009, PERMEN 30/2009, • KEPMEN 29/2003, KEPMEN 111/2003, KEPMEN 142/2003 Remediation Cost • PERMEN 13/2011 Environmental Audit • KEPMEN 42/1994, KEPMEN 30/2001 • PERMEN 17/2010
Water Protection and Management	• PP 82/2001 • KEPMEN 28/2003, KEPMEN 29/2003, KEPMEN 37/2003 • KEPMEN 110/2003, KEPMEN 111/2003, KEPMEN 114/2003 • KEPMEN 115/2003, KEPMEN 142/2003 • PERMEN 1/2007, PERMEN 13/2007, PERMEN 3/2009 • PERMEN 12/2008, PERMEN 28/2009, PERMEN 1/2010
Sea Water Protection and Management	• PP 19/1999 • KK BAPEDAL KEP-205/BAPEDAL/07/1996 • KK BAPEDAL KEP-107/BAPEDAL/11/1997 • KEPMEN KEP-45/MENLH/10/1997 • PERMEN 7/2007, PERMEN 35/2009, PERMEN 12/2010 • PERMEN 4/2011
Air Preservation	• P 41/1999 • KK BAPEDAL KEP-205/BAPEDAL/07/1996 • KK BAPEDAL KEP-107/BAPEDAL/11/1997 • KEPMEN KEP-45/MENLH/10/1997 • PERMEN 7/2007, PERMEN 35/2009, PERMEN 12/2010 • PERMEN 4/2011
Atmosphere Preserva-tion	• UU 6/1994, UU 17/2004 • KEPRES 23/1992 • PERPRES 33/2005, PERPRES 46/2005
Biodiversity Preserva-tion	• UU 5/1990, UU 5/1994, UU 21/2004 • PP 21/2005 • KEPRES 1/1987 • PERMEN 29/2009, PERMEN 15/2012, PERMEN 25/2012
Land Cover Protection and Management	• PP 150/2000 • PP 4/2001 • KEPMEN Kep-43/MENLH/10/1996
Hazardous and Toxic Material Management (B3)	• UU 19/2009 • PP 74/2001 • KEPRES 23/1992 • PERPRES 33/2005, PERPRES 46/2005 • PERMEN 3/2008, PERMEN 2/2010
Waste Management	• UU 18/2008 • PP 71/2012 • PERMEN 13/2012
Hazardous and Toxic Waste Management (LB3)	• PP 18/1999, PP 85/1999 • KEPRES 61/1993 • PERPRES 47/2005 • KK BAPEDAL 01/BAPEDAL/09/1995 • KK BAPEDAL 02/BAPEDAL/09/1995 • KK BAPEDAL 03/BAPEDAL/09/1995 • KK BAPEDAL 04/BAPEDAL/09/1995 • KK BAPEDAL 05/BAPEDAL/09/1995 • KK BAPEDAL 255/BAPEDAL/08/1996 • KK BAPEDAL 02/BAPEDAL/01/1998 • KK BAPEDAL 03/BAPEDAL/01/1998 • KEPMEN 128/2003 • PERMEN 3/2007, PERMEN 2/2008, PERMEN 5/2009 • PERMEN 18/2009, PERMEN 30/2009,PERMEN 33/2009
Supervision and Law Enforcement	Administrative Law Enforcement • PERMEN 9/2010 Civil and Criminal Law Enforcement • PERMEN 54/2000, PERMEN 11/2012

	• KEPMEN 77/2003, KEPMEN 78/2003

4.2 Economic incentives

Tax instruments

Below a number of sustainable production related taxes introduced in Indonesia are briefly characterized.

Name of the tax and legal basis:	**Surface Water Tax.** Surface water is defined as all water available on the surface of soil, except sea water. The tax for surface water is regulated by UU 28/2009 regarding local tax and retribution and Government Regulation PP 42/2008 regarding management of water resources. Tax on surface water utilization is regulated in Regional and Local Regulation (PERDA) applicable for their respective administrative area.
Target/goal of the tax	To prevent uncontrolled decreasing of quality and quantity of surface water which could harm the environment.
Authority responsible for collecting tax revenue:	The surface water tax is categorized as provincial tax (UU 28/2009 article 2 paragraph (1)) and collected using SKPD (Letter Provisions of Tax) or equal document issued by provincial government. The institution to collect the tax is Provincial Department of Revenue (DISPENDA TK I)
Use of tax revenue:	Tax revenue is used to finance the water resources management in respective provinces, i.e to cover the cost incurred related to the following activities: information system, planning, construction, operational and maintenance, monitoring, evaluation and community empowerment.
Total annual tax revenue in 2010, 2011, 2012	2011: 241.3 Bio IDR 2012: 252.7 Bio IDR 2013: 306.5 Bio IDR *Source: MOF (processed)*
Who is obliged to pay the tax	Surface water tax is subjected to individual or agency that get the benefit from taking/utilizing surface water. Exception made to the following parties: household basic needs, agricultural irrigation, traditional fisheries, traditional plantation and forestry that no harm to environment.
Tax base and mechanism to calculate the tax	Surface water tax is determined with considering the water type of sources, location, purpose of usage, quantity, quality, area of usage, environmental risk of damage of the utilization activity. The quantitative measures of those factors are used to establish water acquisition value (NPA). The tax charged for surface water utilization is 10 % (max) from the NPA (UU 28/2009, article 24 paragraph (1)).
Impact and shortcomings of the tax (authors' assessment)	**Environmental direct impact** is small due to tax value is relatively low and does not give sufficient incentive to consumers to use the water in more effective and efficient manner. **Economic impact** is small, e.g: based on random sampling of the provincial budget number for year 2013, the average of contribution from this tax in only less than 2 % (refer to "DATA ANGGARAN PAJAK DAERAH TA 2013" from MOF). **Shortcomings**: requirement on flow meter to measure the water quantity taken is not regulated. This could create inaccuracy of data and the amount of tax should be paid.
Reference and further information	http://www.djpk.depkeu.go.id/data-series/data-keuangan-daerah

Name of the tax and legal basis:	**Ground Water Tax.** Ground water is defined as water held underground in soil or permeable rock, often feeding springs and wells. The tax for ground water is regulated by UU 28/2009 regarding local tax and retribution and Government Regulation PP 43/2008 regarding ground water. Tax on ground water utilization is regulated in Local Regulation (PERDA) applicable for their respective administrative area.
Target/goal of the tax	To prevent uncontrolled decreasing of quality and quantity of surface water which could harm the environment.
Authority responsible for collecting tax revenue:	The ground water tax is categorized as local tax (UU 28/2009 article 2 paragraph (2)) and collected using SKPD (Letter Provisions of Tax) or equal document issued by local government. The institution to collect the tax is Local Department of Revenue (DISPENDA TK II)
Use of tax revenue:	Tax revenue is used to support financing the water resources management in respective city/district, e.g: to cover the cost incurred related to the following activities: information system, planning, construction, operational and maintenance, monitoring, evaluation and community empowerment.
Total annual tax revenue in 2010, 2011, 2012	2011: 330.6 Bio IDR 2012: 381.2 Bio IDR 2013: 421.6 Bio IDR *Source: MOF (processed)*
Who is obliged to pay the tax	Ground water tax is subjected to individual or agency that get the benefit from taking/utilizing ground water. Exception made to the following parties: central and regional/local government institution, household basic needs, agricultural irrigation, traditional fisheries, religion house, fire fighting, research that no harm to water sources, environment and building.
Tax base and mechanism to calculate the tax	Ground water tax is determined with considering the type of water sources, location, purpose of usage, quantity, quality, area of usage and risk of environmental damage. The quantitative measures of those factors are used to establish water acquisition value (NPA). The tax for surface water utilization is 20 % (max) from the NPA (UU 28/2009, article 70 paragraph (1)).
Impact and shortcomings of the tax (authors' assessment)	**Environmental direct impact** is small due to tax value is relatively low and does not encourage consumers to use the water in more effective and efficient manner. **Economic impact** is small, e.g: based on random sampling of the provincial budget number for year 2013, the average of contribution from this tax in only less than 2 % (refer to "DATA ANGGARAN PAJAK DAERAH TA 2013" from MoF). **Shortcomings**: requirement on flow meter to measure the water quantity is not regulated. This could cause inaccuracy of water utilization data and will impact the amount of tax which should be paid.
Reference and further information	http://www.djpk.depkeu.go.id/data-series/data-keuangan-daerah

Name of the tax and legal basis:	**Municipal (Solid) Waste Retribution.** The municipal waste includes household waste and waste similar to it (excluding biological waste) which generated by commercial estate, industry, special zone, social facility, public facility and other facilities. This municipal waste is regulated by UU 18/2008 regarding waste management and PP 81/2012 regarding household waste management. Retribution fee is established in Local Regulation applicable for their respective administrative area, i.e Mayor's Decision Letter (SK Walikota) Depok 5/2012 regarding cleaning services/municipal waste retribution. In this context, waste is defined as solid or half-solid waste.
Target/goal of the tax	The retribution on municipal waste is part of integrated, systematic and sustainable efforts on waste handling (separation, collection, transporting, processing), and waste reduction, reusing and recycling.
Authority responsible for collecting tax revenue:	The retribution is collected using SKRD (Letter Provisions of Retribution) or equal document issued by local government. The institution to collect the retribution is city/district Local Department of Revenue (DISPENDA TK II).
Use of tax revenue:	To support financing in municipal waste management, includes: waste services activities, providing waste collection facility, emergency response related to waste, environment recovery due to improper waste handling and improving competence of waste handler.
Total annual tax revenue in 2010, 2011, 2012	2011: 316.6 Bio IDR 2012: 363.0 Bio IDR 2013: 390.4 Bio IDR *Source: MOF (processed)*
Who is obliged to pay the tax	All parties that received the service of municipal waste handling in respective local administrative area, includes: individual, organization, private agency, government state agency, corporation, cooperation, etc. (refer to UU 28/2009 article 1 paragraph 11). Exception applied to public road cleaning services, public parks, house of worship, social facility and other public area.
Tax base and mechanism to calculate the tax	The tariff of municipal waste retribution is determined by the level of given services which measured based on waste quantity and type of waste (organic/in-organic). In case the calculation of quantity is difficult, estimation shall be used, e.g : based on the floor area occupied by the building. The retribution tariff is vary for each different area. Example for Depok city (SK Walikota 5/2012) : tariff for non-real estate housing less than 21 M2 is 4,000 IDR/month, and for real-estate housing greater than 120 M2 charged 35,000 IDR/month. Penalty is applied for delay or lack of payment with rate 2%/month from outstanding bill.
Impact and shortcomings of the tax (authors' assessment)	**Environmental direct impact** is small. Tariff for commercial and industry is variable to the waste quantity, however the tariff is relatively low and industry are not the biggest contributor to municipal waste generation. **Economic impact** is small since the existing tariff is relatively low, e.g: random sampling to the provincial budget number for year 2013 shows that average contribution from this retribution is less than 2 % (refer to "DATA ANGGARAN PAJAK DAERAH TA 2013" from MOF). **Shortcomings**: requirement on waste separation is not supported by adequate waste treatment facility. Therefore, separated waste can be mixed when it is collected in the final disposal pits (TPA)
Reference and further information	http://www.djpk.depkeu.go.id/data-series/data-keuangan-daerah

Name of the tax and legal basis:	**Waste Water Treatment Retribution.** The waste water treatment retribution is regulated by UU 28/2009 regarding local tax and retribution. In current practices, this retribution is translated as fee for license to discharge the waste water. The beneficiary of this retribution is local government, and the amount of charges is established in Local Regulation (PERDA) applicable for their respective administrative area, e.g: Bandung in West Java, issued PERDA 7/2010 and Lebak in Banten, issued PERDA 5/2009.
Target/goal of the tax	Apart of integrated management system of water quality and waste water control to maintain the water in acceptable quality standard in accordance to its purposes. Strengthen water pollution control as accountability to be less polluting and more resource-efficient patterns of production and consumption of water.
Authority responsible for collecting tax revenue:	The retribution is collected with using SKRD (Letter Provisions of Retribution) issued by local government. The institution to collect the retribution is Provincial/Local Department of Revenue (DISPENDA TK I/II).
Use of tax revenue:	Utilization of retribution revenue from waste water discharge license fee is mainly intended to finance the activities on environmental area, such as inspection and monitoring.
Total annual tax revenue in 2010, 2011, 2012	2011: 5.5 Bio IDR 2012: 7.3 Bio IDR 2013: 8.7 Bio IDR *Source: MOF (processed)*
Who is obliged to pay the tax	All parties that received the service of license to treat, discharge, or utilize waste water in their respective regional/local administrative area, e.g : individual, organization, private agency, government state agency, corporation, cooperation, , etc. (refer to UU 28/2009 article 1 paragraph 11) with no exception.
Tax base and mechanism to calculate the tax	The tariff of waste water discharge are vary for each different area and also determined with different approaches , e.g : tariffs of discharge license in Bandung regency in West Java province (PERDA 7/2010), applied starting from 4,300,000 IDR (class Ie, discharge rate up to 5m3/day) to 17,300,000 IDR (Class IIa, discharge rate more than 4000 m3) and tariff for Home Industry category is 5% from mentioned tariff structure. Retribution tariff in Lebak regency in Banten province (PERDA 5/2009) is applied starting from 100,000 IDR (individual) to 1,000,000 IDR (foreign investment). Penalty is applied for delay or lack of payment with rate 2%/month from outstanding bill. Retribution tariff shall be evaluated at least every 3 years.
Impact and shortcomings of the tax (authors' assessment)	**Environmental direct impact** is small due to the amount of charge does not proportionally impacted by the amount of discharged waste. **Economic impact** is small since the existing tariff is relatively low and the purpose in general only for license approval. **Shortcomings**: No specific method to determine waste water discharge tariff, e.g: one area determine tariff based on type of industry (e.g:Lebak district), the other use waste quantity category (e.g: Bandung district). Charge category of waste water treatment as "retribution", give less impact to control the load of potential contamination to environment. More stringent control can be made if it is put as "tax" with charge amount proportional to the quantity of waste water. This scheme can anticipate the changing of waste water output due to change in production rate or process failure.
Reference and further information	http://www.djpk.depkeu.go.id/data-series/data-keuangan-daerah

Name of the tax and legal basis:	**Gasoline Tax (PBBKB).** Gasoline tax or PBBKB applied to gasoline used for vehicles including the vehicle for water transportation. The tax for gasoline is regulated by UU 28/2009 regarding local tax and retribution. Gasoline tax is further regulated in Local Regulation (PERDA) applicable for their respective administrative area.
Target/goal of the tax	The gasoline tax aimed to reduce fuel consumption which intended to reduce fuel subsidy. Agreed Budget of fuel subsidy for 2013 is 194 trillion IDR from total energy subsidy estimated 275 trillion IDR. The gasoline subsidy mostly absorbed by premium and solar/diesel. Less gasoline consumption will also reduce the emissions that benefit the environment with better quality air.
Authority responsible for collecting tax revenue:	The gasoline tax is categorized as provincial tax (UU 28/2009 article 2 paragraph (1)) and collected by gasoline producer, e.g: Pertamina. The tax is collected at the area of gasoline provider and reported to Department of Finance and Asset Management (DPKAD) in monthly basis.
Use of tax revenue:	Gasoline tax revenue is intended to use for development of alternatives renewable energy and to support transportation infrastructure financing. Reduction of energy subsidy in overall will help budget allocation for other purposes such as health and education.
Total annual budget tax revenue in 2011, 2012, 2013	2011: 8,834.3 Bio IDR 2012: 11,067.9 Bio IDR 2013: 14,711.6 Bio IDR *Source: MOF (processed)*
Who is obliged to pay the tax	Gasoline tax is subjected to consumer of gasoline (individual or agency).
Tax base and mechanism to calculate the tax	Gasoline tax amount use "included" mechanism, means that price paid by consumers has included the gasoline tax. The tariff for non-public transport vehicle consumers is maximum 10 % and tariff for public transport vehicle consumer min 50% lower than tariff of non-public transport vehicles (UU 28/2009, article 19 paragraph (1),(2)). Tariff can be changed using the Presidential Regulation (PERPRES) when the world oil price increases more than 130 % from the oil price assumption used in the state budget of the year.
Impact and shortcomings of the tax (authors' assessment)	**Environmental direct** impact is small. High gasoline subsidy has reduced the positive impact of gasoline tax by reducing the consumer incentive for less consumption. **Economic impact** is high, e.g. based on random sampling of the provincial budget number for year 2013, the average of contribution from this tax is about 15%-25% of local tax budget (refer to "DATA ANGGARAN PAJAK DAERAH TA 2013" from MOF). **Shortcomings**: the national government preferred that local government does not use the maximum 10% tariff as per UU 28/2009 since it will give more burden to state budget (PERPRES 36/2011 regulated the maximum tariff is 5%, valid until 15 Sep 2012). Therefore, the tariff at each different region can be also different depend on provincial decision.
Reference and further information	http://www.djpk.depkeu.go.id/data-series/data-keuangan-daerah

Name of the tax and legal basis:	**Motor Vehicle Tax (PKB).** Motor vehicle tax applied to motor vehicles including the vehicle for water transportation. The tax for motor vehicle is regulated by UU 28/2009 regarding local tax and retribution and PP 65/2011 regarding regional tax. Motor vehicle tax is further regulated in Local Regulation (PERDA) applicable for their respective administrative area, e.g.: PERDA DKI 8/2010 regarding motor vehicle tax for Jakarta.
Target/goal of the tax	The motor vehicle tax aimed to get the revenue for regional/local government, and in the same time to control the impact to environment. Environmental inclusion exists in the requirement of potential of environmental damage as risk factor for the tax tariff.
Authority responsible for collecting tax revenue:	The motor vehicle ownership tax is categorized as provincial tax (UU 28/2009 article 2 paragraph (1)) and collected using SKPD (Letter Provisions of Tax) or equal document issued by provincial government. The institution to collect the tax is Provincial Department of Revenue (DISPENDA TK I)
Use of tax revenue:	Motor vehicle tax revenue is intended to support transportation infrastructure financing, e.g.: the usage of public roads will cause the damage as direct cost for government. In the same time, this tax also to recover the environment from the damage caused by the motor vehicles e.g. air pollution.
Total annual budget tax revenue in 2011, 2012, 2013	2011: 15,204.6 Bio IDR 2012: 19,233.3 Bio IDR 2013: 23,269.8 Bio IDR *Source: MOF (processed)*
Who is obliged to pay the tax	Motor vehicle tax is subjected to motor vehicle owner (individual or agency). Exception made to the motor vehicles ownership by following parties: central and regional government, embassy, consulate, foreign country representatives and representative of international agency with reciprocal principles.
Tax base and mechanism to calculate the tax	Motor vehicle is a progressive tax. Base for tax calculation is selling price of the vehicle plus the "weight" which represent the potential risk to environment and/or the damage to the public road. The weight factor = 1 if the potential to the damage is low and will be more than 1 if the potential is higher. The tax applied for 12 months and should be repaid when the vehicle license is extended. The tariff of tax is as follows: Private vehicles: • First vehicle ownership : min 1%, max 2% • Second and more vehicle ownership: min 2%, max 10% Public vehicles/ambulance/military vehicles/social and religion/fire brigade/regional vehicles: min 0.5%, max 1%. The environmental weight factor include emission test result which regulated by PERMEN of MOE 5/2006 Regarding Standard Emission of Motor Vehicle.
Impact and shortcomings of the tax (authors' assessment)	**Environmental direct impact** is small. "Weight" factor is based on environmental potential risk such as emission test which not strongly drive to choose more environmental friendly vehicles. **Economic impact** is high, e.g.: based on random sampling of the provincial budget number for year 2013, the average of contribution from this tax is about 30%-40% of local tax budget (refer to "DATA ANGGARAN PAJAK DAERAH TA 2013" from MOF). **Shortcomings**: the law enforcement of emission test is still low. In current practice, emission test result is not included in vehicle license extension requirement. Therefore, vehicle license can be extended without considering the emission test result
Reference and further information	http://www.djpk.depkeu.go.id/data-series/data-keuangan-daerah

Name of the tax and legal basis:	**Motor Vehicle Acquisition Tax (BBN).** Motor vehicle acquisition tax is applied to motor vehicles including the vehicle for water transportation with size GT 5 (five gross tonnages) and GT 7. The obligation to pay this tax applied when the vehicles are acquired for the first time and when it is acquired by other party. The tax motor vehicle acquisition is regulated by UU 28/2009 regarding local tax and retribution and PP 65/2011 regarding regional tax. Motor vehicle acquisition tax is further regulated in Local Regulation (PERDA) applicable for their respective administrative area, e.g.: PERDA DKI 9/2010 regarding motor vehicle acquisition tax for Jakarta.
Target/goal of the tax	Similar with motor vehicle tax, the motor vehicle acquisition tax aimed to get the revenue for local government, and in the same time to control the impact to environment. Environmental inclusion exists in the requirement of potential of environmental damage as risk factor for the tax tariff.
Authority responsible for collecting tax revenue:	The motor vehicle acquisition tax is categorized as provincial tax (UU 28/2009 article 2 paragraph (1)) and collected using SKPD (Letter Provisions of Tax) or equal document issued by provincial government. The institution to collect the tax is Provincial Department of Revenue (DISPENDA TK I).
Use of tax revenue:	Motor vehicle acquisition tax revenue is to support provincial operational cost and part of it is used for transportation infrastructure financing, such as public roads maintenance and improvement of public transportation. In the same time, this tax can be used to protect the environment from the damaged caused by the motor vehicles e.g. air pollution.
Total annual budget tax revenue in 2011, 2012, 2013	2011: 241.3 Bio IDR 2012: 252.7 Bio IDR 2013: 306.5 Bio IDR *Source: MOF (processed)*
Who is obliged to pay the tax	Motor vehicle acquisition tax is subjected to motor vehicle owner (individual or agency). Exception made to the motor vehicles ownership for train, embassy, consulate, foreign country representatives and representative of international agency with reciprocal principles, vehicle for military and country security purposes, vehicle for exhibition not intended for sale.
Tax base and mechanism to calculate the tax	Motor vehicle acquisition tax is calculated based on selling price of the vehicle. DKI Jakarta, for example, use selling price of previous year (the first week of December) as reference. The maximum tariff of this tax is as follows: Private vehicles: • First time vehicle acquisition : 20% • Second time or more vehicle acquisition: 1% Heavy duty equipment (not using the public roads): • First time vehicle acquisition : 0.75% • Second time or more vehicle acquisition: 0.075%
Impact and shortcomings of the tax (authors' assessment)	**Environmental direct impact** is small due to vehicle selling price as base of tax calculation, does not include environmental potential risk such as emission test. **Economic impact** is high, e.g.: based on random sampling of the provincial budget number for year 2013, the average of contribution from this tax is about 40%-45% of local tax budget (refer to "DATA ANGGARAN PAJAK DAERAH TA 2013" from MOF). **Shortcomings:** law enforcement of emission test is still low. Emission test result in current practice is not included to motor vehicle acquisition approval requirement. Selling price as base of tax calculation does not include the environmental risk from the age of vehicles. Older vehicles tend to get less tax, while it has higher risk to harm the environment, e.g.: by less quality of emission.
Reference and further information	http://www.djpk.depkeu.go.id/data-series/data-keuangan-daerah

Name of the tax and legal basis:	**Building Construction Permit Retribution (IMB).** Building construction permit retribution applied prior to construction of a building.The applicable regulation is Spatial Planning act 26/2007 and PP 26/2008 regarding National Spatial Plan. Building construction permit is further regulated in Local Regulation (PERDA) applicable for their respective administrative area, e.g: PERDA 12/2012 of Depok city (West Java)
Target/goal of the tax	The building construction permit retribution aimed to ensure that building construction is in compliance with spatial planning and accommodate environmental protection as well as safety requirement.
Authority responsible for collecting tax revenue:	Building construction permit is categorized as certain permit retribution, charged by city/district government. The retribution is collected using SKRD (Letter Provisions of Retribution) or equal document issued by local government. The institution to collect the retribution is city/district Local Department of Revenue (DISPENDA TK II).
Use of tax revenue:	Building construction revenue is to support provincial operational cost for better public services and part of it is used for infrastructure financing.
Total annual budget tax revenue in 2011, 2012, 2013	2011: 976.0 Bio IDR 2012: 1,377.6 Bio IDR 2013: 2,316.7 Bio IDR *Source: MOF (processed)*
Who is obliged to pay the tax	Building construction permit is subjected to individual or agency that gets the building construction permit from city/district authority. Exception made to the following construction: building owned by national or local government, house of worship, orphanage, nursing home.
Tax base and mechanism to calculate the tax	Building construction permit retribution is determined based on the standard price of building per square meter. Correction factor is added with considering the building base coefficient (KDB), building area coefficient (KLB) and building height coefficient (KTB). The administration cost is also added to calculate the final retribution. Incentive for waste treatment facility (IPAL) is given by reduction of permit retribution, e.g: for Depok city, waste treatment facility is charged 50% from normal building.
Impact and shortcomings of the tax (authors' assessment)	**Environmental direct impact** is small. Environmental protection is one requirement for permit approval and support spatial planning implementation, however the driver of tax payment is to secure the land/building ownership, not because environmental issues. **Economic impact** is high, e.g.: based on random sampling of the provincial budget number for year 2013, the average of contribution from this retribution is about 5%-15% of local tax budget (refer to "DATA ANGGARAN PAJAK DAERAH TA 2013" from MOF). **Shortcomings:** Law enforcement and people education regarding requirement of permit need to be improved.
Reference and further information	http://www.djpk.depkeu.go.id/data-series/data-keuangan-daerah

Name of the tax and legal basis:	**Land and Building Tax (PBB).** Land and building tax applied to land and/or building. Land includes lands, internal waters, and sea. Building includes buildings, road, swimming pool, fence, sport centre, park, tower, storages, etc. The applicable regulation is Spatial Planning act 26/2007 and PP 26/2008 regarding National Spatial Plan. Land and Building tax is further regulated in Local Regulation (PERDA) applicable for their respective administrative area, e.g.: PERDA 11/2012 of Sleman district (Yogyakarta).
Target/goal of the tax	As part of spatial planning implementation that land and building need to be managed in effective and efficient manner and to ensure that space is sustainably utilized.
Authority responsible for collecting tax revenue:	Land and Building tax is categorized as local tax, charged by city/district government (UU 28/2009 article 2 paragraph (2)). The retribution is collected using SKRD (Letter Provisions of Retribution) or equal document issued by local government. The institution to collect the retribution is city/district Local Department of Revenue (DISPENDA TK II).
Use of tax revenue:	Building construction revenue is to support provincial operational cost for better public services and part of it is used for infrastructure financing.
Total annual budget tax revenue in 2011, 2012, 2013	2011: 793.6 Bio IDR 2012: 1,242.2 Bio IDR 2013: 7,894.2 Bio IDR *Source: MOF (processed)*
Who is obliged to pay the tax	Building construction permit is subjected to individual or agency who get the building construction permit from city/district authority. Exception made to the following construction: building owned by national or local government, house of worship, orphanage, nursing home.
Tax base and mechanism to calculate the tax	Land and Building tax is calculated based on selling value of the tax object-land and building- (NJOP) minus 10 million IDR (minimum non-taxable NJOP refer to UU 28/2009 article 77 paragraph (4)). Tariff of Land and Building tax is 0.3 % maximum (UU 28/2009 article 80 paragraph (1)). Actual tariff in different area can be different, according to each PERDA.
Impact and shortcomings of the tax (authors' assessment)	**Environmental direct impact** is small. Environmental protection is one requirement for permit approval. Charge is proportional to the used space and the size of land; however the tax value is not significant and does not motivate environmental consideration. **Economic impact** is high, e.g.: based on random sampling of the provincial budget number for year 2013, the average of contribution from this retribution is about 5%-15% of local tax budget (refer to "DATA ANGGARAN PAJAK DAERAH TA 2013" from MOF). **Shortcomings:** In practice, payment of Land and Building tax via bank can only be done in certain bank with also at certain branch. This give less flexibility to tax payer, and in certain cases can delay the payment.
Reference and further information	http://www.djpk.depkeu.go.id/data-series/data-keuangan-daerah

Name of the tax and legal basis:	**Land and Building Acquisition Tax (BPHTB).** Land and building acquisition tax applied to land and/or building when they are acquired and the rights to the land or building is changed/handed-over. Land includes lands, internal waters, and sea. Building includes buildings, road, swimming pool, fence, sport centre, park, tower, storages, etc. The applicable regulation is Spatial Planning act 26/2007 and PP 26/2008 regarding National Spatial Plan. Land and Building acquisition tax is further regulated in Local Regulation (PERDA) applicable for their respective administrative area, e.g.: PERDA 18/2010 of DKI Jakarta.
Target/goal of the tax	As part of spatial planning implementation that land and building need to be managed in effective and efficient manner and to ensure that space is sustainably utilized.
Authority responsible for collecting tax revenue:	Land and Building acquisition tax is categorized as local tax, charged by city/district government (UU 28/2009 article 2 paragraph (2)). The retribution is collected using SKRD (Letter Provisions of Retribution) or equal document issued by local government. The institution to collect the retribution is city/district Local Department of Revenue (DISPENDA TK II).
Use of tax revenue:	Building construction revenue is to support provincial operational cost for better public services and part of it is used for infrastructure financing.
Total annual budget tax revenue in 2011, 2012, 2013	2011: 5,213.5 Bio IDR 2012: 6,115.2 Bio IDR 2013: 8,762.5 Bio IDR *Source: MOF (processed)*
Who is obliged to pay the tax	Land and Building acquisition tax is subjected to individual or agency who get the building construction permit from city/district authority. Exception made to the following parties: embassy, consulate, foreign country representatives and representative of international agency with reciprocal principles, national or local government, house of worship.
Tax base and mechanism to calculate the tax	Land and Building acquisition tax is calculated based on acquisition value of land and building (use NJOP if the information is not available) minus 60 million IDR (minimum non-taxable acquisition value of tax object, refer to UU 28/2009 article 87 paragraph (4)). Land and building acquired through grant or as heritage in the family tree, applied minimum non-taxable acquisition value of tax object 300 million IDR (UU 28/2009 article 87 paragraph (5)). The tariff of Land and Building acquisition tax is maximum 5 % (UU 28/2009 article 88 paragraph (1).
Impact and shortcomings of the tax (authors' assessment)	**Environmental direct impact** is small. Charge is proportional to the used space and the size of land, however the driver of tax payment is to secure the land/building ownership, not because environmental issues. **Economic impact** is high, e.g.: based on random sampling of the local budget number for year 2013, the average of contribution from this retribution is about 15%-17% of local tax budget (refer to "DATA ANGGARAN PAJAK DAERAH TA 2013" from MOF). **Shortcomings:** In many cases, people knowledge regarding the land and building acquisition tax is still lacking. Limited access to PERDA could also create unclear detail tariff calculation of this tax.
Reference and further information	http://www.djpk.depkeu.go.id/data-series/data-keuangan-daerah

Name of the tax and legal basis:	**Duty Exemption for Environmental Protection Equipment and Material.** Imported equipment and materials used to prevent or to control environmental pollution are eligible for duty exemption. The applicable regulation is MOF regulation PERMEN 101/PMK.04/2007 regarding zero import duty for importing pollution prevention equipment. This zero import duty applied to industry or waste treatment company. Equipment to protect environment include installation, machinery and its component which only use for waste treatment to avoid contamination and damage the environment. Materials to protect environment are all biological and/or chemical used for waste water process to avoid contamination and environmental damage.
Target/goal of the tax	The tax exemption aimed to facilitate industry which generates waste and waste treatment company to provide affordable equipment for environmental protection. Zero import duty to encourage/motivate industry toward environmental protection.
Authority responsible for collecting tax revenue:	Industry to propose the duty exemption to Director General of MOF with attaching the recommendation from MOE.
Use of tax revenue:	There is no direct revenue from this scheme. Industry can get benefit of less investment for environmental protection (less capital cost).
Total annual budget tax revenue in 2011, 2012, 2013	Data of duty exemption for environmental protection which has been utilized by industry is not available
Who is obliged to pay the tax	N/A
Tax base and mechanism to calculate the tax	N/A
Impact and shortcomings of the tax (authors' assessment)	**Environmental direct impact** is high due to capital investment to install environmental protection such as waste treatment will be less, and motivate industry to improve their environment protection program. **Economic impact** is high; less cost is preferable for business. **Shortcomings**: Machinery is very often purchased via supplier or local agent. Therefore, end-user tends to do the local purchase transaction instead of importing. Lack of awareness of supplier/agent regarding this incentive will impact the cost of their customers and reduce commitment to environmental protection.
Reference and further information	http://www.sjdih.depkeu.go.id/

Energy Subsidy

Energy in Indonesia has been subsidized since decades and it tends to increase significantly, in particular starting mid of 1990s. Subsidy goes to following energy sources: gasoline (*premium and solar/diesel*), kerosene, LPG, coal and electricity. Among them, gasoline is the biggest contributor to the subsidy absorption. Skyrocketing of world oil prices in 2005 has forced GOI to make adjustment on national fuel price, two times in 2005. The first increase (March), raised fuel prices by 29 per cent, and the second increase (October), raised fuel prices by 114 per cent. Commitment to fuel subsidy reform and broader effort to improve energy conservation and diversification was formulated in Blueprint for National Energy Management issued in 2006. One of successful program in 2007 is reducing kerosene subsidy by replacing the kerosene with LPG. The LPG for 3-kg bottle is slightly subsidized; however the overall gain is saving from the subsidy reduction of kerosene-LPG replacement program. Earlier this year (June 2013), further reduction to gasoline subsidy has been made. This was done to prevent the deficit of GDP exceeding 3%. Some compensation package to safeguard the poor has been made, i.e. by giving them a temporary cash transfer (BLSM). The amount of energy subsidy, in fact, is still high and even higher than spending on defense, education, health and social security combined. The proposed budget for 2013 estimates the energy subsidy around $30 billion or equal to 24 per cent of the central government's total planned expenditure. The effectiveness of gasoline subsidy is also questionable where richer people enjoy more this subsidy instead of the poor.

Electricity price has been gradually increased up to 15% by end 2013 in quarterly basis. Switching some power plants from oil to gas supply and building more geothermal power plants are also expected to save the cost and will drive the energy supply to more renewable sources. As mentioned by ministry of MEMR, the potential geothermal of Indonesia is around 29 Giga Watt or equal to 40% of world geothermal potential, and this is the biggest potential of geothermal in the world. Unfortunately, current utilization of geothermal in Indonesia only less than four per cent. At consumer side, gradual change from *"post-paid"* to *"pre-paid"* electricity metering system has also helped to prevent some losses.

In general, the taken efforts to reduce the energy subsidy include the following programs:

- **Fuel Pricing Reform**. The gradual increase of gasoline to reach economic price level has been acknowledged to continue in order to relief the burden to the national state budget. However, this issue is very sensitive in term of social and political risk. GOI has experienced repeatedly delay in gasoline price increase announcement due to this concern. The election for new President will be done next year, therefore no fuel price adjustment is expected until new cabinet is established.
- **Restricting Consumption of Premium**. *Premium* dominated the subsidy for gasoline. To reduce its consumption, GOI has announced that official vehicles is forbidden to use premium and should use *pertamax* (non-subsidized gasoline). Applying some quota of using subsidized gasoline is stepping to implementation phase which include the trial run of using on-line tools such as Radio Frequency Identification (RFID) control kits. By having this tool, gasoline purchased for each cars can be recorded and quota can be applied to restrict its consumption.
- **Developing Alternative Fuels**. Utilization of more renewable energy sources has been strongly considered, one of the example is mixing of current gasoline with renewable energy sources such as biofuel and bioethanol is expected to increase from recently 5% to 20%-30% by year 2025.

Low Cost Green Car (LCGC) Incentives

Emission of CO_2 from transportation sector in Indonesia in year 2010 was 105.3 million tons and contributed almost 26 % from total 410 tons emission of fuel combustion (IEA, 2012. Compared to year 2005, the CO2 emission in 2010 has increased around 40% (IEA, 2012 and World Bank, 2009). Besides of fuel price reform in order to reduce the oil consumption, GOI has implemented the strategy to produce vehicles with less emission and with affordable price, namely **Low Cost Green Car** (LCGC) as part of **Low Carbon Emission Program** (LECP). Recently, this strategy is supported with establishment of government regulation PP 41/2013 regarding Luxury Tax and issuance of Ministry of Finance (MOF) regulation PERMEN 76/PMK. 011/2012 regarding import duty of machinery and material for industry development related to capital investment. These regulations aimed to drive utilization of energy saving and environmental friendly motor vehicles, to support energy conservation in transportation sector, and to support increase of local motor vehicle producer's production capacity. The vehicles which included in the program of "energy saving vehicle with affordable price" (LCGC), received incentive of 0% of luxury tax (PPnBM) as refer to PP 41/2013 article 3 point (c). This incentive applied to vehicles up to 1200 cc with minimum of gasoline consumption equal to 20 km/liter and vehicle with diesel fuel up to 1500 cc with minimum fuel consumption 20 km/liter. Incentive on tax exemption (zero import duty) for materials/machinery used in the industry that already used min 30% of local materials, is facilitated by PERMEN 76/PMK. 011/2012. In this regulation, motor vehicles industry is also included.

Financial instruments

Below a number of sustainable production related financial instruments introduced in Indonesia are briefly characterized.

Name of the financial mechanism:	Industrial Efficiency and Pollution Control Phase I (IEPC-KfW I)
Target/goal of the mechanism	The IEPC-project is a pilot project established by the Indonesian government and supported by the German government, initiated in year 1998-1999. The grant finances SME investment loans for industrial pollution prevention and investments in efficient and cleaner production technologies. IEPC loans finance three main types of environmental investments: • Investments in production facilities aiming at substantial pollution reduction and/or natural resource savings by financing of more efficient and cleaner production equipment/process technologies; • Investments in machinery and equipment to be used by the SME to recycle, reuse, and recover (3 R) waste materials and waste products; • Investments in waste treatment plants and equipment to reduce and neutralize industrial waste and pollution after the production process (end-of-pipe solutions).
Authority/institutions responsible for implementing the mechanism:	Planning and implementation of this investment component is administered by Indonesian Agency for the Assessment and Application of Technology (BPPT), Jakarta. Kreditanstalt für Wiederaufbau (KfW) administrates disbursements of IEPC funds from Germany to Indonesia. The Ministry of Environment (MOE) of the Republic of Indonesia administers the technical implementation of the IEPC Project. The Ministry of Finance (MOF) administers disbursements of IEPC Project funds from KfW to five participating banks: Bank Negara Indonesia (state-owned bank), BPD Bali, BPD Central Java, BPD West Java and BPD West Sumatra (Regional Government owned banks). The participating banks on-lend sub-loans financed from the grant to eligible SME clients through revolving IEPC Project accounts in each bank.
Amount of money available and actual project expenditure in recent years:	The German Government extended a financial contribution (grant) of DM 15.6 million to the GOI to finance three project components as follows: • DM 11.7 million for the institution of a revolving fund to refinance environmental investment loans primarily to small and medium-sized manufacturing enterprises. • DM 2.5 million to finance the cost of a technical assistance unit (TAU), which provides technical assistance to participating banks of the IEPC Project and their small and medium-sized enterprise (SME) clients. • DM 2.3 million to finance equipment necessary for the treatment of slaughterhouse residues at a slaughterhouse in Jakarta IEPC-KfW I Project has been closed with no change on the amount of agreed fund
Who is eligible to receive funding from the mechanism	The IEPC Project is an environmental revolving fund, which provides investment loans to SME, i.e., to industrial enterprises, which own less than Rp 8 billion in operating assets (i.e. all assets less the value of land and buildings owned by the SME
Which type and how many projects have been financed in recent years	According to report from GFA, there are 142 approved project with following category: Wastewater treatment Plant: 36; Air pollution treatment Plant: 11; Solid waste treatment Plant: 8; Cleaner Production: 22; Recycle, reuse, recover : 30; Land: 7; Laboratory: 1; Consultant fee: 27
Financing instrument	Grants
Impact and shortcomings of the mechanism	Environmental impact is large, number of SME participated to the program is significant. Economic impact is large, return of loans almost one hundred per cent with around 5 per cent gross interest margin to the banks. Shortcomings: Monitoring of projects that have been implemented has not revealed any significant problems
Reference and further information	Final Report, IEPC Project, GFA (2002)

Name of the financial mechanism:	Industrial Efficiency and Pollution Control Phase II (IEPC-KfW II)
Target/goal of the mechanism	The project, IEPC-KfW II, is the second phase of the evaluated credit line for Industrial Efficiency and Pollution Control, initiated in 2005. As overall objective, the project was to make a contribution 1) to reducing environmental pollution and the efficient use of natural resources by SMEs and 2) deepening the financial system by establishing long-term financial instruments for corporate environmental investments. The main project objective was efficient and demand-side lending for corporate environmental investments. The main objective of the programme is to establish an environmental credit line and disburse EUR 9 million to SMEs during 28 months
Authority/institutions responsible for implementing the mechanism:	Programme executing agency is Indonesian Ministry of Environment (MOE). The loan is administered by Apex banks (not administered by MOF), that is Bank Negara Indonesia (BNI) and Bank Ekspor Indonesia (BEI – today Indonesian Eximbank). Participating banks to revolve this loan are Bank BNI, Bank Jateng, Bank BPD Jatim, Bank Kalbar and Bank Niaga.
Amount of money available and actual project expenditure in recent years:	Investment costs (total) EUR 11.25 million; consist of: Counterpart contribution (company) EUR 2.25 million; Funding, of which budget funds (BMZ) EUR 9.0 million. Assessment reported by KfW reveals that no changes in actual project expenditure with the budget.
Who is eligible to receive funding from the mechanism	Indonesian (M)SMEs in the industrial sector with assets of up to IDR 10 billion (approx. EUR 1 million) initially in the particularly polluted regions, Java and Bali, and later Indonesia-wide. Consideration was also given to SME clusters looking to make joint environmental protection investments eligible for assistance. Environmental investments refers to those investments with a beneficial environmental impact, that is, both so-called end-of-pipe solutions (e.g. treatment plants) and integrated measures (including the installation of more modern machinery with lower consumption of water, raw materials, etc.) were eligible for finance.
Which type and how many projects have been financed in recent years	According to the report from MOE, total 120.1 Bio IDR has been disbursed to 42 SME's to support their investment credits and permanent working capital related to investment, e.g: chemicals and spare parts, with maximum limit forty per cent from total loan.
Financing instrument	Loans
Impact and shortcomings of the mechanism	Environmental impact is large, number of SME participated to the program is significant as the continual of successful IEPC-KfW I programme. Economic impact is large, return of loans almost one hundred per cent, with around 5 per cent gross interest margin to the banks. Shortcomings: Monitoring of projects that have been implemented has not revealed any significant problems
Reference and further information	Ministry of Environment, Environmental Incentive Division.

Name of the financial mechanism:	Japan Bank for International Cooperation Pollution Abatement Equipment (JBIC-PAE)
Target/goal of the mechanism	The JBIC-PAE project, is soft loan program as result of agreement AJDB/B-3 (30 November 1992). Implementation started in 1998 with activity of SLA (Subsidiary Loan Agreement) addendum in Aug 2001, followed by OLA (On-Lending Agreement) in December 2001. The funding supported by Government of Japan through Japan Bank for International Cooperation (JBIC) to assist industries primarily in supporting their investment related to environmental protection.
Authority/institutions responsible for implementing the mechanism:	Programme executing: Indonesian Ministry of Environment (MOE) with participant Banks are Bank BNI, Bank BCA, Bank Mandiri, Bank Danamon, Bank Lippo.
Amount of money available and actual project expenditure in recent years:	JBIC-PAE agreed to give the soft loan JPY 12,624 million, consist of Consultancy services JPY 371 million and JPY 12,306 million funding (336,8 Bio IDR), and total fund 34 Bio IDR for the grace period of 5 years and settlement period 20 years. By 2011 all fund available in participant banks will be returned to the GOI.
Who is eligible to receive funding from the mechanism	Small, medium and large-scale enterprises, being a legal entity, having a potential to pollute. The supported investment projects of SMEs and larger scale industry should be approved by MOE to assure the relevance to environmental protection.
Which type and how many projects have been financed in recent years	The JBIC-PAE aimed to finance the investment credit of SMEs and larger scale enterprises with 3-20 years settlement and three years grace period. The loan interest at central bank (SBI) rates with no limitation of maximum loan. Total loan has been disbursed is 407 Bio IDR for 84 SMEs.
Financing instrument	Loans
Impact and shortcomings of the mechanism	Environmental impact is large, the number of SME participating in the program is significant. Cleaner production equipment accounted for 89% of the portfolio. Economic impact is large, cleaner production equipment has become an interesting object for financing by banks and for companies to get funding for. Shortcomings: Financing environmental investments, particularly end-of-pipe, requires large investment amounts and the availability of regular funding for operation and maintenance.
Reference and further information	Ministry of Environment, Environmental Incentive Division.

Name of the financial mechanism:	Debt for Nature Swap (DNS)
Target/goal of the mechanism	The DNS project is one of soft loan programme to finance environmental investment of micro and small enterprises (MSEs) which has limited access to banking. The debt of GOI is exchanged with environmental protection activities financed by Government of Germany through the KfW (Kreditanstalt fuer Wiederaufbau). The DNS programme was initiated in 2006.
Authority/institutions responsible for implementing the mechanism:	Programme executing party is Indonesian Ministry of Environment (MOE) with participant bank PT Bank Syariah Mandiri (BSM). MOE will disburse the funding from KfW as much as 80% and BSM contributed 20% from total loan. Through the participation of BSM which experienced in environmental funding for MSMEs, it is expected that the scope of target groups can be extended and stimulate the success of this programme.
Amount of money available and actual project expenditure in recent years:	Total allocated fund is 6.25 mio Euro within five years period (2006-2010). The total loan disbursement by 2008 was equal to 1.6 mio Euro with approved debt relief phase I equal to 3.2 mio Euro, and the remaining loan disbursement by 2011 was 4.7 mio Euro with proposed debt relief phase II equal to 9.4 mio Euro.
Who is eligible to receive funding from the mechanism	Micro and Small enterprises (MSEs) being a legal entity, potential to pollute which has approval from MOE on the proposed environmental programme. The MSEs can be individual or groups such as cooperation. The funding to support credit investment as well as working capital related to it (maximum forty per cent from total loan)
Which type and how many projects have been financed in recent years	Total disbursed fund by the end of the program in 2010 was 83.5 Bio IDR with 71.7 Bio IDR absorbed by 144 MSMEs to support their investment credit and working capital related to it, and the remaining fund was allocated for technical assistance and audit. The maximum loan for individual MSEs is 500 mio IDR and for groups such as cooperation can be more. The 144 MSEs are located in area of Sumatera, Jabodetabek, West Java, Central Java, Yogyakarta, East Java, Bali, West Nusa Tenggara (NTB), East Nusa Tenggara (NTT), Sulawesi and Kalimantan with type of activities such as industry of organic fertilizer, animal feed, handicraft, tofu clean production, biogas, WWT of textile industry and hospital, micro-hydro, plastic and metal recycle.
Financing instrument	loans
Impact and shortcomings of the mechanism	Environmental impact is large, number of MSEs participated to the program is significant and distributed in large area. Economic impact is large, maximum ten per cent interest to the debtors (less than commercial interest). Shortcomings: Bank consider the maximum loan 500 mio IDR for MSEs individual is too low and auction process for fund allocation to be multiyear (not every year) is considered better for MOE.
Reference and further information	MOE: Environmental Incentive Division

Name of the financial mechanism:	Indonesia Green Investment Fund (IGIF)
Target/goal of the mechanism	IGIF is a pooling fund with participation from government, multilateral agencies, donors, and private sources, with the purpose to finance environmental friendly investments through public private partnership (PPP) scheme. IGIF aimed to leverage private and market based sources of funding for low emissions development projects. Set up as a revolving fund that can invest in private operations that have a return on investments. Expected to mobilize public private partnerships in order to mobilize investment in low-carbon development.
Institutions responsible for implementing the mechanism:	Housed at the Centre for Public Investment (Pusat Investasi Pemerintah - PIP) at MoF. Based on Government Regulation (PP) No 1/2008 regarding Government investment, the GOI investment can be done through direct investment to infrastructure and other area established by MoF.
Money available, actual project expenditure in recent years	The Indonesia Green Investment Fund is an investment fund that will focus on infrastructure developments that will help cut greenhouse gas emissions in in Indonesia. The fund is seeking $1 billion in initial capitalization. Indonesia's Government Investment Unit will place $100 million into the fund. The remaining $900 million will be provided by institutional investors, foreign governments, and private investors. Retrieved from "http://taighde.com/w/Indonesia_Green_Investment_Fund"
Eligibility for funding from the mechanism	Refer to MoF Decision 177/KMK.01/2010, PIP allowed to do a direct investment to the environmental friendly investment area related to the following objectives: • To support environmental friendly development, in particular the program related to climate change • To extend and to accelerate investment cooperation between government and private sector Based on above regulation, PIP able to directly invest in the environmental friendly projects in term of equity injection and cooperation with financial agency and other investors.
Funded projects in recent years	IGIF is recently under finalization phase and it is planned to develop a limited corporation, namely PT Indonesia Green Investment as an investment pool for investors who are interested in environmental friendly projects. GOI has allocated fund USD 100 mio for this programme.
Financing instrument	Offering equity, debt, infrastructure and direct investments
Impact and shortcomings of the mechanism	Environmental impact is expected to be large, e.g: to invest and finance low carbon investments. Economic impact is expected to be large, the program is expected to catalyse infrastructure development that could speed economic grow. Shortcomings: The fund is expected to support renewable energy, water treatment, and deforestation containment projects.
Reference and further information	http://www.pip-indonesia.com; http://taighde.com/w/Indonesia_Green_Investment_Fund; Reference document: „Dukungan Kementerian Keuangan dalam Program Efisiensi Energi di Indonesia";Badan Kebijakan Fiskal, MoF Jakarta, 31 January 2012

Name of the financial mechanism	Indonesia Climate Change Trust Fund (ICCTF)
Target/goal of the mechanism	Harmonize and coordinate international support for climate protection activities. Support Indonesia's efforts in reducing greenhouse gas emissions and developing low-carbon economy, and, adapt to the adverse effects of climate change. Mobilizes, manages and allocates funding in alignment with development priorities in order to contribute to: 1) the implementation of GHG emission mitigation measures and climate change adaptation measures; 2) the mainstreaming of climate change issues into national, provincial and local development planning.
Authority/institutions responsible for implementing the mechanism	Trust Fund led and managed by the Government of Indonesia established through Bappenas Ministerial Decree No. 44/M.PPN/HK/09/2009, revised by No. 59/M.PPN/HK/09/2010. Manages grants based on the Presidential Regulation No. 80/2011 on Trust Funds. The ICCTF currently has a Steering Committee (chaired and co-chaired by BAPPENAS, including members from MoF, MoE, NCCC and related ministries), a Technical Committee (chaired by BAPPENAS, and co-chaired by BAPPENAS and MoF, including members from MoF, BAPPENAS, line ministries/agencies, NCCC, development partner representatives and technical experts) and the ICCTF Secretariat (Admin, Technical & Financial). Implementing Agencies for ICCTF funding include ministries, agencies, provincial governments and NGOs. For the time being funds are channelled through UNDP Indonesia who acts as Interim Trustee.
Amount of money available and actual project expenditure in recent years:	The ICCTF is currently designed to attract, mobilize and manage financial resources for climate change mitigation and adaptation and activities which contribute to national climate change policies of Indonesia. Currently the ICCTF is designed to receive grants from bilateral and multilateral contributors. According to the ICCTF Business Plan 2011-2020, the ICCTF has contributions from DFID/UKCCU (USD 9,518,110), AusAID (USD 1,404,470) and SIDA (USD 331,730).USD 11.3 million were received by September 2011, of which 848,499 USD were allocated for the Secretariat operations and 4.6 million USD for financing three projects. Spending has continued since and currently the ICCTF is already looking for new sources of funds to finance new projects.
Who is eligible to receive funding?	Currently line ministries and government agencies (denominated as ICCTF Executing Agencies/EA) who are expected to submit project proposals to the ICCTF for approval. EAs may collaborate with other organizations such as CSO, private companies, local governments and academic institutions.
Which type and how many projects have been financed in recent years?	According to the ICCTF Progress Report 2010-2012, currently funds three projects: - Sustainable peat land management (project budget 1.2 mln USD) with 4 project sites in Sumatra and Kalimantan. Expected outputs include: land mgmt. guidelines, GHG emissions monitoring and demo projects. - Energy efficiency in steel and pulp & paper industries (project budget 2.0 mln USD) with 18 project sites mainly in Java: Expected outputs include guidelines on operating procedures, energy audits and ESCOs. - Public awareness and education program (project budget 1.1 mln USD) with 5 project sites in Sumatra, Java and Sulawesi. Expected outputs include radio programs, training for trainers and education modules. 3 new projects approved in 2012 include: degraded peat land management; community forest management and health vulnerability assessment.
Financing instrument	Grants
Impact, shortcomings (authors' assessment)	Currently the direct environmental impact is small as initial 6 projects have predominantly focused on technical assistance, education and awareness (i.e. not GHG reduction). For the same reason, the economic impact is small. Shortcomings: administrative costs high; complicated/centralized decision-making structure; supports large projects only; access through central ministries/agencies only: no recurring revenue sources; was recently rejected by Adaptation Fund as NIE
References	ICCTF website: www.icctf.or.id

Apart from the mechanisms described above, Ministry of Finance currently operates a SME loan program (business credit line aimed at SMEs, referred to as "KUR") aimed at feasible businesses which can provide no or insufficient collateral. This program was funded in 2009-2013 with about 136 trillion IDR, whereas loans of up to 500 million IDR can be made available through participating banks and government pays insurance premium in case of loan default. Actual lending conditions may vary from sector to sector

According to the authors' meeting with MoF, MoF is currently considering combining the KUR scheme with th IEPC2 scheme to enable soft lending that includes both government guarantees (from KUR) and reduced interest rates (from IEPC2 funds).

MoF apparently also operates a SME lending program through participating banks where MoF lends to banks at around 7% and banks are obliged to lend to SMEs at interest rates below commercial rates. The maximum spread is apparently set at +10% for small companies, +7% for medium sized companies and +12% for state owned companies. According to MoF a cumulative total of 2.7 trillion IDR is available in this program (referred to as KUMK) since 2004, whereas the program is running until 2019. Only one part of this program includes environmental criteria, namely the capital stemming from IEPC1 (i.e., repaid IEPC1 loans which are revolved through KUMK – currently about 30 billion IDR would be returned from the IEPC1 scheme while only about 8 billion IDR of that amount have been reallocated. According to MoF the large difference can be explained by low demand for environment related soft loans having an effective interest rate of about 17-18%).

According to the information provided during a meeting of the authors with representatives of the Ministry of SMEs and Cooperatives, also the Ministry of SMEs and Cooperatives currently operates a loan program targeted at cooperatives. In 2008-2012 about 3.7 billion IDR were made available for soft loans to cooperatives (e.g., fisheries, transport, agriculture, restaurants, palm oil, livestock) at interest rates of 0-9% and with loan durations of up to 3 years.

Apart from the revolved IEPC1 funds, none of the above mentioned soft loan and loan guarantees schemes apply environmental or "green" criteria. Both MoF and Ministry of SME representatives met agreed that it might be useful to look into an option to apply environmental/green criteria to these credit lines (or parts of them) in the future.

Emission Reduction Investment (ERI)

Recently, MOE is developing the programme to support the Government's 26% CO2 emission reduction target by 2020, namely Emission Reduction Investment (ERI). The Emission Reduction Investment (ERI) aimed to finance the industry for their environmental programs in order to reduce the emission by giving the low interest loan. This program is under evaluation by the Government of Germany and expected to run in 2014. The following term and condition will be applied to this program:

- Loan given by KfW for the ERI could reach Euro 100 million with the assumption that an average loan size to industry is 10 billion IDR and a total of projects funded would reach 50 – 100.
- Eligible end receivers of loans would be SMEs and bigger corporations including state-own enterprises in the range of USD 500.000 – USD 5.000.000 capital.
- ERI can be combined with commercial credits or other credit programs
- The amount of loan up to 50 Bio IDR and can also be given in dollars

ERI program is expected to reduce the emission equal to 750,000 tones carbon dioxide emission per year.

Green Public Procurement

Green Public Procurement (GPP) in Indonesia was introduced by Act 32 of 2009 on Environmental Protection and Management urging national and regional governments to "produce eco-friendly goods and services". In 2010 KLH published a "Green Procurement System Action Plan in Indonesia" assisted by UNESCAP. The GPP policy has been accommodated by President Regulation No. 54 of 2010 on Public Procurement partially amended by President Regulation No. 70 of 2012. Additional details on GPP are included in the draft GOI Regulation on Economic Environmental Instruments.

Practical work on introducing and mainstreaming GPP has been started as part of the present EU Switch Asia funded SCP Policy Project Indonesia. The work is at early stages yet and (Bauer, 2013) provides for an overview for Indonesia's strategy to introduce GPP, including:

- The implementation of a GPP strategy, e.g. based on the 2010 "Green Procurement System Action Plan in Indonesia", which includes the establishment of a GPP Task Force, the preparation of GPP guidelines and GPP criteria, the training of procurement officials, the implementation of GPP pilots and the development of databases of eco-friendly products.
- The designation and implementation of institutional responsibilities to allow for realization of GPP.
- The elaboration and implementation of GPP systems, including: GPP criteria (including use of eco-labels for GPP) and technical standards based on stakeholder consultation/involvement; inclusion of life-cycle costing in procurement decisions; GPP capacity development/training; Green products catalogues/website; GPP monitoring system; tools and support systems for companies aiming at compliance with GPP criteria; incentive system for GPP officers and GPP suppliers; control & enforcement procedures for GPP suppliers; GPP stakeholder information system.

4.3 Non-economic incentives

Environmental labeling, rating and certification systems have been introduced in Indonesia since 2002. Such mechanisms have then been growing until today covering a range of areas in the industrial sector, including general industry, forest product industry, general manufacturing industry, electrical appliances industry, plastic industry, and agro-industry. Below main current instruments are briefly characterized.

Eco-labeling

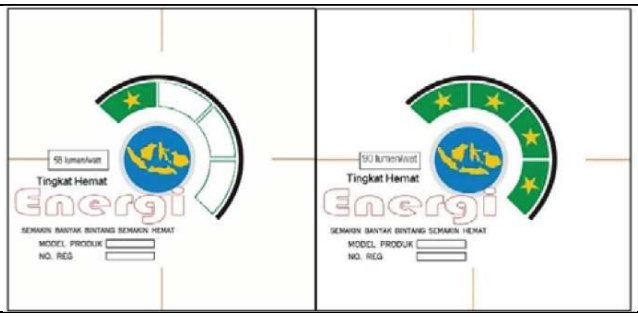
Ecolabel Program for Manufactured Products:

	Ramah Lingkungan
Main Actor:	Ministry of Environment
Type of Labelling:	Type I labelling system, a logo to be put on the product/packaging once it is certified
Nature of Program	Voluntary
Established	2004
Participants	7 companies
Targeted Product/:	*currently available for:* Textile and Textile Products, Household synthetic washing detergent powder, Uncoated print paper, Leather, Leather Casual Shoes, Coated print paper, Sanitary tissue, Wrapping paper, Primary Batteries type carbon zinc and alkaline, Wall Paint, Plastic Bags *intended to cover all manufactured products*
Criteria	based on Indonesian National Standards (SNI) for each product category. Compliance with (1) Act 32/2009; (2) ISO 14001; (3) ISO 9001; (4) no harmful packaging
Assessment method	certification body conducts a assessment & verification through field visit, sampling, and lab testing (if necessary) certification granted after approval of evaluation report by certification committee (under the certification body)
Effect	19 products certificated (all are from the product group “uncoated paper”, produced by 4 producers in Indonesia (page 27 EC 2013) plus 2 which do not comply with SNI standard; Environmental aspects covered: use of chemicals, water and waste water, energy, percentage of recycled paper, etc. No specific information found about GHGs emission reduction expected through this scheme or mechanism.
Reference and further Information	GIZ 2013, page 19 ff. EC 2013, page 26 ff.

Self-Declaration Labeling:

	 Dapat Terurai (*Degradable*) **Gambar 4 - Contoh Penggunaan Logo Ekolabel Swadeklarasi Indonesia untuk Klaim Dapat Terurai (*Degradable*)**
Main Actor:	Ministry of Environment
Type of Labelling:	Type II labelling System, logo created by the industry player is permissible (under certain criteria), but a standardized national logo/symbol is provided
Nature of Program	Voluntary
Established	2009
Participants	none yet
Targeted Product/:	to cover all products, especially those which have the environmental characteristics of "compostable, degradable, design for disassembly, extended life product, recovered energy, recyclable, recycled content, reduced energy consumption/energy saving, reduced resource use, reduced water consumption/water saving, reusable and refillable, and waste reduction"
Criteria	each environmental characteristic product has different criteria for the assessment, however the general rules are: (1) Every claim has to be verified, (2) The evaluation criteria are based on standards or peer reviewed, (3) The evaluation shall be well-documented, (4) The testing & calculation shall be done in a responsible manner
Assessment method	KLH developed a guideline for self-declared environmental claims in 2009 Usage of the KLH owned Logo requires verification (of claims) through a Verification body, which has to be registered with KLH. Draft guideline for the Verification body is currently developed / under negotiation Therefore there is no registered verification body and the Logo not in use.
Effect	No explicit concept of GHGs emission reduction stated on the guidelines, however, the category of recovered energy, reduced energy consumption, and waste reduction indicate its concern and elaboration of GHGs emission reduction.
Reference and further Information	GIZ 2013, page 49 ff. EU 2013, page 31 ff.

Eco-labeling Program for Energy Efficient Products:

	
Main Actor:	Ministry of Energy and Mineral Resource
Involved Actors:	KAN accreditation committee, BSN standards development, certification body and laboratory for the assessment,, industry sector
Type of Labelling:	energy efficiency star rating of four stars scheme: type I labeling system. a logo to be put on the product/packaging once it is certified
Nature of Program	Mandatory (without Label product not enter Indonesian Market)
Established	2003 for the general system and Logo; 2011 for CFLs product category
Participants	7 companies have submitted their declaration of Conformity (for CFLs only)
Targeted Companies and Product/:	Mandatory for Companies: (1) affecting the environment significantly; (2) listed at the stock exchange; (3) producing goods for export purposes; (4) having the potential to contaminate the Environment (5) Companies of particular interests for national or subnational authorities And Voluntary for any other companies interested Planned for electrical home appliances products, such as Lamp, refrigerator, AC, TV, etc. but only effective for CFLs
Criteria	For CFLs Compliance with (1) SNI 04-6504-2001 and SNI IEC 6069:2009 on safety and testing standard; (2) administrative legal documents of business, IUI; (3) QMS; (4) Importers to hold Test Result Certificate (TRC) of an Accredited Laboratory Rating Criteria: meeting one of the energy efficiency level (lumens produced / watt) regulated under the MoE Regulation no.6/2011 on Sign-tagging of Save Energy for CFL
Assessment method	*CFLs:* verification by a certification body to confirm the compliance of CFL producers, then submission of declaration of conformity to the government for certification (a permit to use the label) *For other appliances:* (1) submission of application of certification to a certification body for verification. (2) Issuing of certificate by certification body after their confirmation the product comply with the criteria. no declaration of conformity needs to be submitted to the government
Effect	Principle of energy efficient products indicates that the consideration of GHGs emission reduction is of a priority of concern. However, there is no specific calculation of total emission reduction achieved through this labelling scheme, so that its contribution to the national commitment is hardly known.
Reference and further Information	GIZ 2013 page 15ff. Homepage MoE

Indonesian Sustainable Palm Oil (ISPO)

	
Main Actor:	Ministry of Agriculture
Type of Labelling:	Type I labelling system, a logo to be put on the product/packaging once it is certified
Nature of Program	Mandatory
Established	2011, to enter into force in 2015
Participants	10 plantation industries from 9 (nine) companies have hold ISPO certificate, out of 56 industries registered in the first certification phase
Targeted Product/:	Palm Oil Plantation Industries: (1) supplier plantation, and (2) the palm oil manufactory (PKS – Pabrik Kelapa Sawit)
Criteria	2 steps of assessment: (1) Plantation Business Assessment, as prerequisite, and (2) ISPO certification Criteria for (1): aspects of legality, management, plantation, processing, social, regional economy, environment, and reporting. For (2), there are 7 principles, 41 criteria and 126 indicators to be fulfilled. The Principles: (1) Permit System and Plantation Management, (2) Application of the Technical Guidance on Palm Oil Processing and Development, (3) Environmental Management and Monitoring, (4) Responsibility upon Employees, (5) Social and Community Responsibility, (6) Local Economic Development, (7) Sustainable Business Development
Assessment method	First assessment is conducted by the government and will result in a plantation industry classification, range from Class I (very good) to Class V (very poor). Class I, II and III industries are obliged to apply for ISPO certification ISPO application to be submitted to an accredited certification body for screening documents, and field assessment. The report is then submitted to ISPO secretariat for documents screening, verification, and approval. Public announcement is done through ISPO website and media an optional up-grade certification to Supply Chain certificate is permissible once the industry certified by ISPO
Effect	All palm oil plantation industries have to reduce any cause that produce GHG emission, i.e. land use change, indirect land use change (to avoid using land with high carbon stock), future land clearing, utilization of fertilizers and pesticides, Palm Oil Mills Effluent (POME) – wastewater treatment, energy for transport and electricity, as well as the technical process of CPO production. calculation of saving emission is still limited to biofuel only to meet importing countries standard on GHGs offset. Every plantation is now encouraged to apply methane capture facilities on their POME to reduce the impacts of methane emission.
Reference and further Information	GIZ 2013, page 41 ff. Homepage MoA

Chain of Custody for forest products

	
Main Actor:	Lembaga Ekolabel Indonesia (LEI), together with the Ministry of Forestry
Type of Labelling:	Type I labelling system, a logo to be put on the product/packaging once it is certified
Nature of Program	Voluntary
Established	2008 - 2009
Participants	5 forest product industries with products consist of pulp, tissue, paper, paperboard, converted paper products and indoor furniture products
Targeted Product/:	for industries that process forest products such furniture, plywood, sawn wood and pulp and paper a similar labelling scheme for non-wood forest products is still in the piloting phase
Criteria	the forest product is originated from sustainable production forest management, no illegal source of wood is permissible under this scheme LEI MIXED: at the minimum, 70% of the raw materials certified by LEI and at the maximum, the other 30% of the materials certified through different mechanism (e.g. Controlled-wood/VLO/VLC/SVLK or international CoC certification)
Assessment method	Object of the assessment is route of forest product movement, which entails nodes (location of mutations). Simply, the system assesses firstly in one previous node, and then continues a tracking into further nodes if the previous node has not yet been certified, until meeting the criteria. by a certification body: pre-field assessment (screening documents), field assessment, Performance Evaluation and Certification Decision Making by expert panel, Affirmation of Certification Decision, Resolution of Conflict in Certification Decision, Final Decision Making, and surveillance
Effect	The development of sustainable forest management certification under LEI was intended to contribute to the emerging carbon trading as a national or international scheme. It is stated that the certified forest management unit will have an opportunity to participate in the trading as a seller of carbon offset. The total carbon captured (or not emitted) is resulted through implementation of certain management to the trees/forests, and calculated using an agreed method.
Reference and further Information	GIZ 2013, page 25 ff.

Green Label Indonesia (GLI)

	
Main Actor:	Indonesia Solid Waste Association (InSWA)
Involved Actors:	
Type of Labelling:	Type I labelling system, a logo to be put on the product/packaging once it is certified
Nature of Program	Voluntary or Nominated
Established	2010
Participants	1 company producing plastic bags and packaging -- PT. Tirta Marta
Targeted Product/:	an environmentally friendly product (with less waste or good waste management), proved having no harm to people's health. As response to the market, up to now, it is still limited to plastic bags or packaging to fill in the gap between the available SNI and the market progress
Criteria	To comply with: (1) technical criteria set by an accredited laboratory-BPPT, (2)standards of quality management and quality control, (3)locally or nationally produced, (4)having a support program for product expansion with other small and medium industries
Assessment method	An application includes: (1) necessary documents to show standards compliance, (2) list of the converters, and (3) sample of products is submitted to InSWA. A verification stage is done through: (1) field visit to the converters for market evaluation, and (2) random sampling of product for laboratory testing. The certificate will then be awarded based on the verification result.
Effect	not determined.
Reference and further Information	GIZ 2013, page 38 ff.

Awards

Green Industry Award

Main Actor:	The Ministry of Industries
Type of Labelling:	Five Rating Certification Scheme to Industries, from Level 1 to level 5, determined based on the earning points
Nature of Program	Voluntary or Nominated
Established	2010
Participants	about 160 companies
Targeted Industries	Big Industries, State-Owned Industries, and Small & Medium Enterprises
Criteria	including the clean production applied (reuse, reduce, recycle), compliance with the national environmental regulations for industries, waste management/treatment, and community development program. Criteria for big industries & SMEs are different
Assessment method	Step of implementation: program dissemination, application submission, document screening, document verification, field assessment, evaluation (earning points), winners nomination, Decision of the winners through a Decision Letter of the Minister, Awarding Ceremony and public announcement/dissemination
Effect	the criteria includes production efficiency program and total energy that imply the companies' contribution to GHGs emission reduction. However, its real contribution to the emission reduction is not explicitly calculated
Reference and further Information	GIZ 2013, page 32 ff.

Sustainable Business Awards (SBA)

	SBA Sustainable Business Awards
Main Actor:	Indonesian Council on Sustainable Business Development and KADIN
Type of Certification:	Certification to corporate
Nature of Program	voluntary
Established	2012
Participants	19 corporate were awarded, with 3 corporate were the winning of two different categories
Targeted Industries	National and multi-national companies that have proved their best practice and leadership in running a sustainable business and management (including industries).
Criteria	The assessment is done through: (1) Sustainable Strategy and vision, (2) energy management & low carbon business, (3) water management, (4) waste & recycling practice, (5) biodiversity impact, (6) community project, (7) workplace initiative, and (8) supply chain management.
Assessment method	the steps are: (1) qualification & nomination, (2) assessment survey and quality assurance through field visit and interviews, (3) Analysis and Scoring, (4) international benchmarking, (5) conference & award dinner
Effect	The criteria explicitly include energy management and low carbon business, but unfortunately there is no explanation whether specific calculation of the carbon emission is required for the assessment
Reference and further Information	Homepage of SBA GIZ 2013, page 46 ff.

Indonesia Green Award (IGA)

	
Main Actor:	The La Tofi School of CSR, in cooperation with Bisnis & CSR Magazine
Type of Labelling:	Certification to corporates/ institutions and individuals
Nature of Program	Voluntary/ Nominated
Established	2010
Participants	IGA 2010: 54 winners (with 10 categories) IGA 2011: 34 awards (with 2 categories) IGA 2012: 46 awards (with 21 Categories ranging from different industries over service and government sector to individuals)
Targeted Industries	Various industry sectors based on the categories openned each year: mining, energy, manufacture, agribusiness/industry, automotive, pharmacy, consumer product, forestry, insurance, telecommunication, transportation, real estate, banking, hotel, media, hospital, school, campus, etc. Regions: Province and City Individuals
Criteria	The concept of IGA is relatively different each year, with criteria and indicators created and reviewed according to the actual environmental issues. Ex. In 2011: save the environment in an exceptional and inspirational way, marginal or grassroots movement on the environmental conservation is preferable, Ex. in 2012: The application of green technology, sustainable production/management, recycle and paperless program, renewable resources/energy, CSR, sustainable post recovery for mining, provision of green open space and free smoking area, installation of water (or other) treatment facility, less waste and pollution, more energy and water saving, and a consistent environmental campaign.
Assessment method	The assessment is lying on two principles. First, expert panel is established for conducting the assessment, with the principle of "wisdom of crowds" taken. Data collection is done through the internet, individual and professional judgment based on experiences, juror's networks, as well as direct clarification requests, if necessary. More often than not, the certification entails recommendation sheet for improvement to address unsolved disputes among the expert panel team.
Effect	In 2010 and 2011, the focus was given to the process or activities implemented by the industry players that may positively affect the environment. In 2012, the criteria were expanded to also include the achievement of the industry players to produce less waste and pollution as well as more energy saving from their production process. However, there is no explanation whether the calculation is required to show their contribution to the national commitment of 26% emission reduction
Reference and further Information	GIZ 2013, page 34 ff. Homepage of IGA

Certifications

Green Building Certification

	 GREENSHIP Bronze 35 % Silver 46 % Gold 57 % Platinum 73 %
Main Actor:	Green Building Council Indonesia
Type of Certification:	Building Environmental Performance rating of four grade certification scheme -- Platinum, Gold, Silver, and Bronze
Nature of Program	Voluntary
Established	2010
Participants	52 buildings are engaged: Certified Greenship NB:2 Certified Greenship EB: 3 Registration phase: 20 Registered project NB: 25 Registered project EB: 2
Targeted Industries	Buildings in the category of new buildings/major renovation, existing builidngs, as well as interior space
Criteria	To be assessed against the criteria set up under each category, including: (1) Building Environment and Management, (2) Energy Efficiency and Refrigerant, (3) Indoor Air Health and Comfort, (4) Appropriate Site Development, (5) Material Resources and Cycle, and (6) Water Conservation Ex. for New Building Greenship, there are 45 criteria and 101 points that can be achieved by the building design
Assessment method	Consists of two assessment: (1) design recognition, based on for tender data; and (2) final certification, based on as built data and field assessment data All required documents have to be submitted to GBCI, together with completed standard assessment forms provided by GBCI
Effect	the criteria set up under the category of energy efficiency and refrigerant requires emission reduction calculation for earning points the emission reduction can be achieved through the instalment of energy efficient feature such as low energy air conditioning system, low energy generated from better facade, etc.
Reference and further Information	GIZ 2013, page 51 ff. Homepage Green Building Council

Environmental Certification for Micro, Small and Medium Enterprises (MSME)

Main Actor:	KADIN in cooperation with the Ministry of Environment
Involved Actors:	
Type of Labelling:	Certification to MSME industry players
Nature of Program	voluntary, helped by big companies approach
Established	Starting 2013/14
Participants	not yet implemented
Targeted Industries	The industry players categorized in micro, small and medium enterprises as the target, for example barber shop, laundry, tailor, printing shop, food stall, etc.
Criteria	still being developed
Assessment method	still being developed; the basic concept is: (1) big private companies to provide funding and help MSME to improve their environmental performance (2) The successful MSMEs are awarded a certificate as long as meeting the criteria (3) Dissemination through media and KADIN networks (4) Ensure the sustainability through surveillance or regular capacity building.
Effect	not yet implemented
Reference and further Information	GIZ 2013, page 55ff. Homepage KADIN

Rating

PROPER Program

	 valid until : 2016-02-22 issu date : 2011-02-23 certificate reg. no. : 824 111 05001
Main Actor:	Ministry of Environment
Type of Labelling:	environmental performance rating of five colours certification scheme: Gold, Green, Blue, Red, Black respectively
Nature of Program	Mandatory and Voluntary
Established	2002
Participants	2002: 85 companies 2004: 251 companies 2005: 466 companies 2007: 516 companies 2009: 627 companies 2011: 995 companies
Targeted Product/:	Mandatory for: (1) Companies affecting the environment significantly; (2) Companies listed at the stock exchange; (3) Companies producing goods for export purposes; (4) Companies having the potential to contaminate the environment or pose other environmental risks for the community; (5) Companies of particular interests for national or subnational authorities Voluntary for any other companies interested
Criteria	Compliance: (1) AMDAL, UPL/UKL, and the reporting; (2) water pollution measurement; (3) air pollution measurement; (4) Toxic and hazardous waste management; (5) sea water pollution control; and (6) land degradation potential from mining activities Beyond Compliance: (1) EMS; (2) energy efficiency; (3) emission reductions; (4) implementation of 3R; (5) water & environmental conservation; and (5) CSR
Assessment method	the government firstly decides the targeted industries, and then requests for companies' self-measurement reports. Field visit for verification is implemented by technical team before conducting the analysis for rating process. The process is back to back involving stakeholders from the echelon I government officer in the Ministry of Environment, PROPER advisory Board, Local Government, and the company itself before being approved by the Minister for public announcement.
Effect	under the beyond compliance category of assessment, there is criteria of emission reduction, which comprises of conventional and GHGs emission. Companies can submit their calculation on the (GHGs) emission reduction as an achievement, with the calculation sheet attached for verification. For example, a calculation based on Permen LH no.12/2012 for mining related activities.
Reference and further Information	PROPER Homepage GIZ 2013, Page 19 ff.

Education and Awareness Raising

UNDP "Institutional Strengthening of Education for Sustainable Consumption (ESC) - Advancing ESC Policy and Implementation Strategies"

Linked to the Marrakech Task Force for Education for Sustainable Consumption (ECS) as already mentioned in chapter 2.4, UNEP is implementing pilot projects on institutional strengthening of ESC to support the mainstreaming of ESC and lifestyles in formal education curricula as well as in informal education at the national and local levels. Starting in October 2011 Indonesia is one of the pilot country representing Asia and the Pacific for the "Institutional Strengthening of Education for Sustainable Consumption (ESC) - Advancing ESC Policy and Implementation Strategies" project. The local implementing partner is Yayasan Pembangunan Berkelanjutan (YPB) or Foundation for Sustainable Development. The project is implemented by YPB, with the UNEP's support, guidance and technical assistance, and the involvement of other key partners such as the Partnership for Education and Research about Responsible Living (PERL) and the Institute for Global Environmental Strategies (IGES). Various Indonesian government ministries are actively involved in the project's development, including the Ministry of Environment and the Ministry of Education and Culture.

As part of this pilot project an *excellent overview and analysis* of the existing national policy frameworks and initiatives in Indonesia has been published relevant to ESC, sustainable development, sustainable consumption and production and education strategies/plans in March 2012. The document "Institutional Strengthening of Education for Sustainable Consumption (ESC) - Advancing ESC Policy and Implementation Strategies Mapping opportunities in Indonesia" can be found by clicking here. For further information on the development and dissemination of national guidelines and recommendations on ESC as well as the Monitoring and Evaluation of the Program Ms. Darwina Widjajanti, YPB (darwina@ypb.or.id) can be contacted.

Indonesia Centre on Sustainable Consumption and Production

Launched only in October 2013 at the World Resources Forum in Davos the Indonesia Centre on Sustainable Consumption and Production (IC-SCP) is established at Surya University as a think-tank on issues related to sustainable consumption and production as well as waste management. The Center is expected to provide not only advice to the Government of Indonesia on SCP related issues, but also to assist the industry and business in running their operation more environmentally friendly, which also includes providing education in implementing CSR. Apart from those goals also the raising of public awareness regarding issues like cost efficiency, energy efficiency, environmental sustainability and waste generation belongs to the main goals of the center. Regarding the proposed activities for the first year it is planned to establish IC-SCP as focal point of Indonesia, a publication on "Guidelines for Household Waste Survey" among others. For further information please visit the IC-SCP Homepage.

Education Sector Analytical and Capacity Development Partnership

The Government of Indonesia (GOI), the Australian Agency for International Development (AusAID), the European Union (EU) and the Asian Development Bank (ADB) agreed to establish the Analytical and Capacity Development Partnership (ACDP) as a facility to promote policy dialogue and institutional reform of the education sector to underpin policy implementation and help reduce disparities in provincial and district education performance. Among others ACDP supports also the formulation of a "National Action Plan for Environmental Education". The main initial outputs will be strategic reviews of environmental education in three provinces. The review will focus on in the curriculum and learning materials at all els. Based on this review recommendations for further support to curriculum revision, teacher training, strengthening capacity of Environmental Study Centers and strengthening vocational education related to 'Green Jobs' will be formulated. The lessons learned in the targeted provinces will be used to prepare a Terms of Reference for preparation of a national action plan for environmental education. During mid of 2013 the final inception report was accepted. Activities like workshops and formulation of roadmaps are currently under way. For details see http://www.acdp-indonesia.org/page/show/52

PAKLIM "Climate Change Education and Awareness"

Started in 2013 an interesting activity supported by the German Government is Climate Change Education and Awareness (Working Area 4) of the climate Program PAKLIM, which aims to raise the awareness and knowledge of the Indonesian youth, age range between 12-24 years. To set up positive examples for the environmental stewards of tomorrow PAKLIM cooperates with the Ministry of Environment (KLH) and the Ministry of National Education (Kemdiknas) to support mainly communities and schools. To foster the climate change education and awareness in Indonesia further PAKLIM will develop with chosen communities and schools pilot activities and new modules resulting in a better and more sustainable knowledge transfer. In a next step lesson learnt from those activities should be anchored in national and local curricula and educators in the communities as well as teachers in schools have to be prepared and trained accordingly. Campaigns and the use of new media will be one vehicle to address the target group.

Voluntary agreements

VPA with the Indonesian Cement Industry

Supported by GIZ PAKLIM discussions have been held between representatives of nine Indonesian cement companies and the Ministry of Industry on a Voluntary Partnership Agreement (VPA) since 2011. Still under negotiations the cement industry is regarded to be the first industry in Indonesia to enter into the VPA scheme. At present PAKLIM holds workshops to bring together and engage representatives from Indonesian cement companies to become champions across their industry sector by developing and committing to self-organized action plans to voluntarily and proactively reduce their greenhouse gas (GHG) emissions through Voluntary Partnership Agreement (VPA).

Under this umbrella working groups are working to identify priorities, decide on actions/targets and build the necessary internal capacities to meet governmental expectations for voluntary reductions (2% by the end of 2014 in line with the recently announced Ministerial Decree on Roadmap Cement Industry). This decree calls for 2% voluntary reduction between 2011 and 2015, and 3% mandatory reduction in GHG emissions between 2015 and 2020. To foster this initiative the Ministry of Industry plans to provide enabling framework conditions for the cement industry as well as create further incentives. However, further statement of commitment from the cement industry, in particular from the top management, is seen still necessary in this framework. For the further development of the VPA process please visit the homepage of PAKLIM´s Events

VPA under FLEGT

As already introduced in chapter 2.4, this VPA negotiated under the FLEGT mechanism is currently the most developed VPA in Indonesia. On 30 September 2013, representatives from the Government of Indonesia and the European Union (EU) marked their mutual commitment to ensuring that timber entering the EU is produced legally. They signed a Voluntary Partnership Agreement (VPA) at a ceremony in Brussels. Indonesia and the EU are still to ratify the agreement and to determine whether Indonesia's system for assuring the legality of its timber under VPA requirements is fully operational. Once these two steps are completed, Indonesian timber and timber products included in the VPA can enter the EU market as FLEGT-licensed timber, which is automatically considered legal under the terms of new EU Timber Regulation enforced in March 2013. Indonesia and the EU are important trading partners. Ten per cent by value of Indonesian timber and timber products exports are currently destined for the EU. For further information please visit the official Homepage of FLEGT on Indonesia

4.4 Assessment of existing instruments

Based on the discussion of existing Indonesian as well as international experience with SCP instruments, this section provides for observations on the effectiveness of existing SCP instruments in Indonesia.

Command and control: norms and standards, environmental control and enforcement

Reviewing current environmental regulations with gathering some inputs from industry practices on how it is implemented, reveals the following concerns that could be valuable to be taken into account:

- The existing environmental regulation has widely and deeply safeguarded the potential pollution into water (including sea water) and into the air including establishment of its standard for acceptable quality. However, regulation for soil protection is still limited and focused into several areas or issues, e.g.: mining. On the other hand, other facilities such as manufacturing facility, workshop, etc. are also potential to contaminate the soil, e.g. through the liquid waste spills and inadequate containment of storage and process area. Establishment of quality standards for soils and related regular monitoring of industry would have considerable potential.
- Industry emission and effluent monitoring need to be done by independent and certified laboratory as mentioned in the regulation. In fact, the number of certified independent laboratory is very limited which sometimes creates difficulties for industry to manage the schedule of emission and effluent monitoring. Another concern of industry is that the cost for certain parameters is relatively expensive, e.g. analysis package for sea water monitoring. On the other hand, lack of certified and independent laboratories can be seen as opportunity for business to provide better services to industry's pollution monitoring. For this reason, more inclusion of third party laboratories as one of stakeholder into the process of policy development and implementation of environmental management, need to be addressed.
- Environmental monitoring reports from industry which contains data of emission, effluent, waste generation, waste treatment, etc. are regularly delivered by industry to the Ministry of Environment, in hard copy format. This practice has disadvantages, e.g. time consuming and costly, particularly for industries which are located far from a Ministry of Environment office. Industry also experienced some cases to re-submit the data already reported, for various reasons. In addition to that, hard copy reporting does not support a desirable "less-paper" culture of sustainable consumption. Knowing these concerns, environmental reporting system needs to be improved, e.g. by using the on-line database (report digitation). The digital features of on-line reporting will improve the availability of data and allow for alerting industries to consistently issue reports. Structured digital information will support more effective and efficient data processing by the Ministry of Environment to generate valuable reports and analysis such as profile of waste discharged to environment by industry, trend of waste generation, etc. When it is required, the on-line reporting can be integrated to incentive/disincentive program on waste management, e.g. as calculation tool to determine waste discharge tariff for industry. At the present, there is no sufficient regulation to charge the industry for each quantity of waste they discharged to environment. Therefore, industry discharging more waste to the environment is treated in the same manner as industry generating less waste. In other word, it does not adequately support the polluter pays principle (higher costs for higher pollution) that can drive industry to seek the technology to reduce their waste. In this context, the on-line reporting system will become an effective support tool.
- Requirement to conduct monitoring of pollution in the industry are spread-out in many different regulations. This created an obstacle or at least need more effort for industry to identify all monitoring requirement. Furthermore, it could trigger higher risk for non-

compliance. Meanwhile, the consequences to the deviation, nowadays is more stringent. Developing a simple and comprehensive monitoring matrix of required testing, frequency, as well as reporting will be very valuable for industry. A good example from the Ministry of Environment which was identified during this study is the availability of a flyer which contains list of all applicable environmental regulations. This simple information will support industry to comply with such regulations. In the future, designing simple communication tools such as flyer, pocket books, etc. need to be considered to promote and support compliance of industry with regulations.

Environmental taxes, fees and charges

The use of environmental taxes in Indonesia is currently limited, including if we compare how environmental taxes are used internationally. A significant potential for further progress with environmental taxation exists. The GOI should consider making more extensive use of such instruments, considering the advantages environmental taxes may offer (e.g., more cost-efficient achievement of environmental policy goals, internalization of external costs of pollution and resource use).

One area where GOI has already taken initiative toward environmental taxation is the energy sector: The 2009 Ministry of Finance Green Paper on Economic and Fiscal Policy Strategies for Climate Change Mitigation in Indonesia outlines a comprehensive strategy on fossil fuel taxation and subsidy removal. Earlier in 2013 fossil fuel subsidies were already reduced. In the authors' opinion, it would be highly desirable also from a SCP promotion point of view to implement the mentioned Green Paper, ideally with a few adjustments that will be further detailed in the recommendations section:

- Voluntary agreements with key industrial sectors, linked to proposed new CO2 tax (see recommendation No. 15)
- Temporary earmarking of part of the CO2 tax revenues to the proposed Indonesia Green Fund for nation-wide spending program related to smaller scale renewable energy and energy efficiency, as well as climate change mitigation/adaptation (see recommendation No. 11)
- Introduction of additional tax incentives related to energy efficiency and renewable energy (see recommendation No. 4)
- Make best possible use of international carbon finance, such as Adaptation Fund, Green Climate Fund, REDD+, and bilateral and multilateral mechanisms, e.g., through the proposed Indonesia Green Fund (see recommendation No. 11)

As regards existing environmental taxes (see section 4.2), it would be desirable to reform these such that they provide for better pollution- and resource use-reduction incentives.

With regard to the pricing of service for water supply, municipal waste water treatment, electricity supply and municipal waste management, in most localities, Indonesia has a long way to go to achieve service prices that actually cover all costs (operation and maintenance costs, as well as reserves for longer term investments into rehabilitation/upgrading of infrastructure) related to providing the services. Currently the provision of most of these services is subsidized, i.e., costs are covered through public budgets. Such a system does not provide for sufficient incentives for rationalizing/reducing resources used and the user, in the end, pays for the costs anyway – often even higher costs (i.e. through other taxes and payments that finance the budget). From a SCP perspective too it would be most desirable to have pricing structures that are based on service provision cost; as such prices would provide for powerful incentives to individual users to rationalize their individual resource use.

Environmental financing

GOI continues to offer substantive budgetary funds to the enterprise sector through soft loans implemented by various banks (e.g., KUR, KUMK, Ministry of SME credit line, see section 4.2). However, only a very small part (i.e., reinvested IEPC1 capital) of this portfolio includes green or environmental criteria or is aiming at green/environmental technology investments. It would thus be desirable to investigate whether green criteria could be introduced in these schemes in the future or whether a certain part of these credit lines could be focused at eco-technology investments which bring result in both environmental and economic gains.

Apart from these, a number of small ("small" considering the size of Indonesia) credit lines are available which target green investments, notably IEPC2 and IGIF, both operated by MoF through bank and offering soft loans with interest rates that are a few percentage points lower than those of commercial credits.

Apart from the ICCTF there is no dedicated national/provincial institution which provides for environmental finance or would have significant human capacities in environmental finance.

It is of course an important achievement that the ICCTF has been established in 2009. However, in the opinion of several experts met by the authors', the ICCTF is currently not perceived as a particularly efficient and transparent Fund. The IICTF may have a number of shortcomings, including for example: little focus on financing projects that actually reduce GHG emissions, high administrative costs, complicated/centralized decision-making structures, support available for large projects only, access possible through central ministries/agencies only, and absence of recurring revenue sources. The ICCTF was recently rejected by the Adaptation Fund as National Implementing Entity (NIE) and there may be significant potential for further improvements in operational procedures and fiscal policy compliance of the ICCTF (see discussion and table on OECD Good Practice in Managing Environmental Funds in section 2.3). The ICCTF is apparently now in a process of reform. In the author's opinion, an interesting reform option for the IICTF could be to:

- Enhance its spending scope: in addition to climate change mitigation/adaption expenditure it could be tasked also with managing other environmental or SCP related spending areas, such as: waste management, waste water treatment, industrial pollution, biodiversity & nature protection.
- Reorganize the Fund such that it would have a solid dedicated legislation and would be still government controlled, but have e certain degree of operational independence, e.g. along the lines of what is required from NIEs by the Green Climate Fund.
- Ensure that the Fund would meet international fiduciary standards and environment/social/gender safeguards, such as those required for NIEs by the Green Climate Fund.
- Consider (temporary and/or partial) earmarking of revenues from existing and proposed new environmental taxes, for example those discussed in section 5 of the present report.
- Consolidate several existing environmental soft loan schemes into the reformed Fund.
- Given the size of Indonesia, consider establishing a Fund system that consists of a National Fund (focusing on investments of national significance) and Provincial Funds (focusing on investments of provincial/local significance), whereas a formula for revenue distribution to Provincial Funds would have to be elaborated. Such a "decentralization" of environmental financing would probably bring ownership increases and efficiency gains. The Polish system of Environmental Funds could provide for a useful example of good international practice here.

Overall, the picture that unfolds therefore is that current public environmental expenditure schemes in Indonesia primarily target investments that are close to commercial feasibility, i.e. by offering soft loans with interest rates just a few points below commercial loan interest rates. There is very little domestic (and foreign) finance available for projects requiring larger levels of subsidization or plain grants. The implementation of environmental/SCP policy will be partial and insufficient with such an approach, as many investments required by environmental/SCP policies will not yield (sufficiently high) returns, i.e. will not be implemented with existing financing sources available.

In the authors' opinion it could therefore be desirable to establish an Indonesia Green Fund which could effectively fill this gap. From a public finance policy point of view it would probably not be desirable to have specialized Funds for each subsector of the environment sector (e.g., a climate change Fund such as the already established ICCTF, plus a waste management Fund, plus a biodiversity Fund, plus an eco-technology Fund, etc.). Rather it would make sense to have *one* Fund for the entire environmental sector which would have dedicated spending windows (climate change, waste, eco-technology, etc.). One comprehensive Fund would also have lower administrative costs, higher operational efficiency (one set of operational guidelines, procedures and forms for all spending windows) and higher leveraging/co-financing potential as compared to several sub-sectoral Funds.

GOI may want to consider this while reforming the ICCTF. As mentioned, one option, for example, could be to upgrade the ICCTF into the new proposed Indonesia Green Fund. Please note that the proposed Indonesia Green Fund is further discussed in recommendation 11 (section 5 below).

Green procurement

The concept of green public procurement has only recently received attention of policy makers and is so far not practiced on a comprehensive scale. GOI has, however, started preparatory work to enable GPP on a wide scale.

Non-economic instruments

Voluntary Agreements

The concept of Voluntary Agreements relatively new in Indonesia and at present only few initiatives have been started. Considering the wide use and positive impact internationally and the fact, that Voluntary Agreements are especially appropriate in environments where command and control approaches have been developed to a limited extent only, the concept of Voluntary Agreements should have significant potential in Indonesia.

Awareness Raising and Education

Even though awareness raising and education will mainly have an impact in the mid- to long-term, changing consumption and production patterns through awareness raising and education can obviously have a major impact on the three pillars of sustainability. At present the integration of sustainable consumption and production into formal and informal education systems ranks high on the agenda of relevant ministries and the donor community. The development of a National Action Plan for Environmental Education is a clear sign for this development. Introducing SCP related issues into curricula, programs to train teachers, teaching materials and guidelines, but also linking SCP to school management and using schools as hubs for informal education could be key components of a mid-long term strategy. In addition, enriching higher education in universities with SCP related issues will be important.

Labelling, Rating, Certification

A significant number of labeling, rating and certification systems already exist in Indonesia. Regarding effectiveness and wider impact, so far only PROPER is practiced for a sufficiently long duration that it can be mention as a success story. Other instruments, including Eco label are either not yet fully implemented or have a very limited outreach and/or low number of certified products. Further progress in this area would not necessarily mean to introduce more instruments. Rather, the focus would have to be put on further developing, improving and upgrading of existing and emerging new instruments.

The following table shows the *authors'* assessment of the current effectiveness of selected *existing* SCP instruments in Indonesia.

Effectiveness and reform potential of existing SCP related economic and non-economic incentives in Indonesia

Instrument	Environmental benefits (emissions↓, resource use↓)	Economic benefits (growth↑, innovation↑)	Social benefits (job creation↑, occupational health↑)	Comments
Economic instruments				
Surface water tax	❶❷③④⑤⑥⑦⑧⑨⑩	❶❷③④⑤⑥⑦⑧⑨⑩	❶❷③④⑤⑥⑦⑧⑨⑩	No effective incentives for rational resource use
Groundwater tax	❶❷③④⑤⑥⑦⑧⑨⑩	❶❷③④⑤⑥⑦⑧⑨⑩	❶❷③④⑤⑥⑦⑧⑨⑩	Tax rates relatively low, not encouraging efficient use
Municipal Waste Retribution	❶❷❸❹⑤⑥⑦⑧⑨⑩	❶❷❸④⑤⑥⑦⑧⑨⑩	❶❷❸④⑤⑥⑦⑧⑨⑩	Low tariff; low staffing; small incentive for waste reduct.
Wastewater Treatment Retrib.	❶❷③④⑤⑥⑦⑧⑨⑩	①②③④⑤⑥⑦⑧⑨⑩	❶②③④⑤⑥⑦⑧⑨⑩	Low rates with no connection to actual pollution loads
Eco-tech import tax exemption	❶②③④⑤⑥⑦⑧⑨⑩	①②③④⑤⑥⑦⑧⑨⑩	①②③④⑤⑥⑦⑧⑨⑩	Procedures too complicated. Less than 10 cases p.a.
KLH-KfW IEPC soft loans	❶❷❸④⑤⑥⑦⑧⑨⑩	❶❷③④⑤⑥⑦⑧⑨⑩	❶②③④⑤⑥⑦⑧⑨⑩	Scheme too small/closed for major impacts nationwide.
ICCTF	❶❷③④⑤⑥⑦⑧⑨⑩	①②③④⑤⑥⑦⑧⑨⑩	①②③④⑤⑥⑦⑧⑨⑩	Few projects only focusing on TA, not GHG reduction
MoF soft loans, KUR, KUMK...	❶②③④⑤⑥⑦⑧⑨⑩	❶❷❸❹❺❻❼❽⑨⑩	❶❷❸❹❺❻⑦⑧⑨⑩	No environment focus or environmental criteria
Green public procurement	❶②③④⑤⑥⑦⑧⑨⑩	❶②③④⑤⑥⑦⑧⑨⑩	①②③④⑤⑥⑦⑧⑨⑩	Legal basis for GPP exists, but GPP not yet practiced
Waste bank	❶❷❸④⑤⑥⑦⑧⑨⑩	❶❷❸❹⑤⑥⑦⑧⑨⑩	❶❷❸④⑤⑥⑦⑧⑨⑩	Nationwide impacts and recycling/reuse rates modest
Non-economic instruments				
PROPER rating system	❶❷❸❹❺❻⑦⑧⑨⑩	❶❷③④⑤⑥⑦⑧⑨⑩	❶❷③④⑤⑥⑦⑧⑨⑩	Widely used. Only basic performance indicators used.
KLH Eco-labels type I	❶②③④⑤⑥⑦⑧⑨⑩	①②③④⑤⑥⑦⑧⑨⑩	①②③④⑤⑥⑦⑧⑨⑩	Label rarely used (paper only); little/no demand
KLH Eco-label type II	①②③④⑤⑥⑦⑧⑨⑩	①②③④⑤⑥⑦⑧⑨⑩	①②③④⑤⑥⑦⑧⑨⑩	Label not yet practiced; demand expected to high
Energy efficiency eco-label	①②③④⑤⑥⑦⑧⑨⑩	①②③④⑤⑥⑦⑧⑨⑩	①②③④⑤⑥⑦⑧⑨⑩	Label not yet practiced; demand expected to high
Green building certification	❶❷③④⑤⑥⑦⑧⑨⑩	❶❷❸❹❺⑥⑦⑧⑨⑩	❶❷❸④⑤⑥⑦⑧⑨⑩	Several buildings already certified. Scale up needed.
SME environmental certification	①②③④⑤⑥⑦⑧⑨⑩	①②③④⑤⑥⑦⑧⑨⑩	①②③④⑤⑥⑦⑧⑨⑩	Scheme in preparation, not yet implemented
Green industry award	❶❷③④⑤⑥⑦⑧⑨⑩	①②③④⑤⑥⑦⑧⑨⑩	①②③④⑤⑥⑦⑧⑨⑩	Voluntary program with a few dozen participants only.
Sustainable business award	❶❷❸④⑤⑥⑦⑧⑨⑩	❶②③④⑤⑥⑦⑧⑨⑩	❶②③④⑤⑥⑦⑧⑨⑩	Voluntary program with a few dozen participants only.
Green hotel award	❶❷❸❹⑤⑥⑦⑧⑨⑩	❶❷❸④⑤⑥⑦⑧⑨⑩	❶❷③④⑤⑥⑦⑧⑨⑩	A number of hotels certified. Scale up needed.
Private eco hotel certification	❶❷❸❹⑤⑥⑦⑧⑨⑩	❶❷❸④⑤⑥⑦⑧⑨⑩	❶❷③④⑤⑥⑦⑧⑨⑩	A number of hotels certified. Scale up needed.

Note on how to read the table: Dark green circles indicate the authors' rating (opinion) of the actual, nationwide effect of an instrument on a scale of 1-10. Light green circles indicate authors' opinion on the maximum possible effect of an instrument, i.e. if it was reformed with a view to maximize positive environmental, economic and social impacts. **Note that the above rating represents the authors' opinion only and is intended to demonstrate primarily the significant reform potential of different instruments.** Additional details on the authors' assessment of individual instruments are included in sections 4.2 and 4.3.

4.5 Gaps in the policy framework

Based on the assessment of existing Indonesian as well as international experience with SCP instruments, the following instrument gaps can be mentioned:

Norms and standards, environmental control and enforcement

Progress with command and control type of instruments incomplete, should be further developed if political will exists. This could include:

- Emission reduction goals (percentage of current emissions) followed by voluntary agreements with major emitters, followed by emission standards & emission taxes. Effective, transparent and fair control and enforcement system related to emission reduction standards.
- Minimum standards for foreign direct investments
- BAT requirement for certain type of investments (e.g., large companies, investments co-financed with public support) financed with public funds
- Improved monitoring and control system at industry/plant level hand in hand with further developing PROPER

Environmental taxes, fees and charges

Existing instruments that should be reformed or enhanced:

- All existing tax instruments in the energy and transport sectors
- Import tax exemption of environmental technologies
- Charges for water and electricity supply, as well as municipal waste management (pricing that allows for full cost coverage of service provision)
- Existing waste and waste water taxes
- Existing water surface tax and groundwater tax

New instruments that could be considered:

- Product taxes (e.g., on packaging waste, electronic & electric waste; light bulbs; used vehicles (vehicle wracks); batteries & accumulators; etc.)
- Deposit refund systems for certain beverage containers, electronic & electric waste; light bulbs, batteries & accumulators, etc.
- CO2 tax on combustion of fossil fuels
- Accelerated depreciation for large green technology investments
- Vehicle import/production tax differentiated according to the level of CO2 emissions of the vehicle
- Annual circulation tax differentiated according to the level of CO2 emissions of the vehicle

Environmental financing

Existing instruments that should be reformed or enhanced:

- Green procurement – on all government levels, but also in larger companies
- The ICCTF
- Current MoF spending programs/soft loan and loan guarantee schemes (e.g., KUR, KUMK, Ministry of SME credit line, see section 4.2) with a view to add green investment criteria and/or focus part of the credit lines on green investments

New instruments that could be considered:

- An Indonesia Green Fund (with presence on both national and provincial levels), filling in gaps in the existing system of public support, developing environmental financing capacity in the country and tapping into international sources of finance, such as Green Climate Fund (GCF), REDD+, as well as bilateral/multilateral sources.
- Systematic greening of annual and longer term (MTEF) budgets of all government ministries and agencies
- Green banking products (green mortgages, green bank accounts, green investment products, green insurance products)

Awareness raising and education

- Even though there are an increasing number of planned activities to include SCP topics into formal and informal education systems in Indonesia, it needs to be safeguarded that these plans will actually be realized.
- Guidelines for green CSR projects.

Voluntary agreements

Possible new opportunities for public-private voluntary partnerships may include:

- Voluntary agreements linked to a proposed new CO2 tax
- Voluntary agreements linked to proposed new environment related transport taxes
- Voluntary agreements linked to proposed reformed/enhanced waste and waste water taxes
- Voluntary agreements related to cost covering service charges in water supply, municipal waste management and electricity supply

Eco-labeling

- Progress made with various eco-labels needs to be consolidated so that eco-labels are used more widely and can be used for green procurement.
- Consumer information strategies/systems in general should be strengthened too.

Information, certification, reporting

- The PROPER scheme represents a significant achievement which should be further developed.
- There is also progress with certification schemes which should be further consolidated and extended.
- Generally SCP related information is scattered and often not easily available. A one-stop internet based information portal would be helpful providing relevant information for free and easily accessible. Two portals could be developed, one for industry and one for consumers. Alternatively one platform could be developed where relevant information for producers and for consumers is divided.

5 RECOMMENDATIONS

Based on the assessment of current Indonesian as well as international experience with SCP instruments, the present section provides for recommendations for further progress with SCP instruments in Indonesia. Both, recommendations to improve existing instruments as well as introducing new instruments are presented.

The implementation of any of the proposed recommendations should ideally be based on a widely agreed and adopted governmental strategy, e.g. an Indonesia SCP Action Plan/Strategy. Such an Action Plan/Strategy would facilitate inter-ministerial coordination, properly mandate specific activities and help with harmonization of affected policies.

As most recommended economic incentive schemes require inter-ministerial coordination, preparatory work and capacity development it is recommended as an overarching enabling activity that an inter-ministerial Environmental Fiscal Reform (EFR) Commission will be established in Indonesia. Such an EFR Commission could identify, prioritize and guide the development of specific policy proposals and instruments. During the adoption period of an instrument or policy package, the Commission could support and inform the political process. Once relevant policy instruments have been enacted, the EFR Commission would initiate and guide monitoring and evaluation processes leading to continuous fine-tuning and upgrading of instruments and related policy packages.

Training and capacity development in environmental fiscal reform of policy makers and officials involved in policy implementation (e.g., members of the proposed inter-ministerial Environmental Fiscal Reform Commission, as well as additional interested experts) would also constitute a highly desirable overarching enabling activity. Note that the GIZ Rioplus program has developed an EFR training program which could serve as starting point for EFR capacity building, leading to the formulation of EFR priorities and a national EFR Road Map that could be used subsequently by the proposed EFR Commission.

The following recommendations are provided below in a standardized tabular form:

Recommendation 1:	Measures to increase compliance with law
Recommendation 2:	Measures to rationalize norms and standards
Recommendation 3:	Measures for better control and enforcement
Recommendation 4:	Systematically green existing tax and duty system
Recommendation 5:	Energy taxation and subsidy removal
Recommendation 6:	Green transport taxes
Recommendation 7:	Reform existing environmental taxes
Recommendation 8:	Product taxes (recycling/reuse of certain types of wastes)
Recommendation 9:	Cost covering waste service, electricity and water charges
Recommendation 10:	Systematically green government budgets
Recommendation 11:	Indonesia Green Fund
Recommendation 12:	Green banking and insurance services/products
Recommendation 13:	Implementation of green procurement
Recommendation 14:	Provision of SCP related awareness raising and training
Recommendation 15:	Engage in voluntary agreements with industry
Recommendation 16:	Facilitate eco-technology transfer
Recommendation 17:	Upgrade and mainstream eco-labeling
Recommendation 18:	Web-based information platform
Recommendation 19:	Further upgrade PROPER scheme

Recommendation 1: Measures to increase compliance with law	
Why? **The rationale**	• Rule of law is achieved only if compliance with the law is high • Non-compliance caused by a lack of knowledge & capacities, esp. in SMEs • Cultural resistance to enforcement
Design, **Mode of operation**	• Use performance indicators to assess levels of compliance with regulatory requirements and reductions of the negative impact on the environment • Integrate and simplify environmental permitting and compliance monitoring across all environmental media (air, water, waste, etc.). • Use compliance promotion particularly with SMEs, e.g.: provide tailored practical information on legal requirements and compliance strategies; environmental authorities discuss and record compliance issues & solutions with operators and follow up on agreed solutions; provide free or subsidized expert advice on cleaner production and resource efficiency; elaborate and disseminate sector-specific best practices guides; provide assistance in developing corporate environmental management systems, etc. Note that many of these measures could be financed through the proposed Indonesia Green Fund (see recommendation 11) • Targeting of compliance monitoring on facilities where potential environmental risks are greatest and/or where operator performance suggests a higher risk of non-compliance. • Making level of enforcement proportionate to the extent of non-compliance. • Enhancing stakeholder cooperation, transparency and public disclosure of information, e.g. by engaging in regulator-business dialogues or by publicly disclosing enforcement and non-compliance information. • Mobilizing opportunities provided by information technology, e.g., by using web-based integrated monitoring, reporting and information tools
Environmental impact	Large, especially with SMEs.
Economic/social impact	Indirect, potentially large, i.e. if the implementation of compliance measures will result in SME investments
Preparatory work	Institutional lead: Ministry of Environment Preparatory work needed: Strategic planning of desired measures, including integration with existing policy and instruments (e.g. PROPER). Legal requirements: Legal basis will have to be elaborated and adopted. Time required for preparatory work: 1-3 years
Feasibility	Cost to introduce the measures: Medium-large, as significant man power and training will be needed to implement the measures. Cost to implement the measures: Medium (caused mainly by new man-power and training needed in relevant authorities) Industry acceptance: Medium (will require industry response but at the same time strict command and control can be avoided in most cases) Political feasibility: Medium (additional industry regulation & cost vs. modern, participatory compliance techniques and positive environmental effects)

Recommendation 2: Measures to rationalize norms and standards	
Why? **The rationale**	• Properly set and implemented environmental norms and standards will have significant effects on reduced pollution loads • Better air/water/soil quality. Decreased pollution related health costs. • Innovation and investment into pollution reduction technology leading to increased competitiveness in international markets
Design, **Mode of operation**	• Imposition of facility specific emission permits/standards and reduction goals (e.g., percentage of current emissions), followed by voluntary agreements with major emitters (sector specific approaches), followed by emission taxes (only if voluntary agreements failed). • Minimum standards for foreign direct investments • Consider BAT requirement for certain type of investments (e.g., large companies, investments co-financed with public support) financed with public funds
Environmental impact	Significant emission reductions that are predictable to a significant extent
Economic/social impact	Moderate in terms of contribution to growth (investments into pollution reduction increase production costs but at the same time increase competitiveness in international markets). Significant in terms of social impacts (less pollution, better air/water/soil quality).
Preparatory work	Institutional lead: Ministry of Environment Preparatory work needed: Detailed assessment of existing/international approaches, formulation of reform options. Drafting/revising relevant legislation. Stakeholder dialogue to improve draft legislation. Legal requirements: Drafting/revising relevant legislation Time required for preparatory work: 2-3 years
Feasibility	Cost to introduce the measures: Moderate-high (sector-specific approaches needed) Cost to implement the measures: Moderate-high Industry acceptance: Low (increase in production costs) Political feasibility: Low (increase in production costs; imposing additional compulsory regulation is not popular)

Recommendation 3: Measures for better control and enforcement	
Why? **The rationale**	• Significant and predictable effects on reduced pollution loads • Better air/water/soil quality. Decreased pollution related health costs. • Innovation and investment into pollution reduction technology leading to increased competitiveness in international markets
Design, **Mode of operation**	• Establish more effective and transparent/fair control & enforcement systems hand in hand with strategy (see recommendation 2) for emission reduction goals; voluntary agreements; emission standards; emission taxes • Establish improved monitoring and control system at industry/plant level hand in hand with further developing PROPER (see recommendation 19).
Environmental impact	Significant emission reductions that are predictable to a significant extent
Economic/social impact	Moderate in terms of contribution to growth (investments into pollution reduction increase production costs but at the same time increase competitiveness in international markets). Significant in terms of social impacts (less pollution, better air/water/soil quality).
Preparatory work	Institutional lead: Ministry of Environment Preparatory work needed: Detailed assessment of existing/international approaches, formulation of reform options. Drafting/revising relevant legislation. Stakeholder dialogue to improve draft legislation. Legal requirements: Drafting/revising relevant legislation Time required for preparatory work: 2-3 years
Feasibility	Cost to introduce the measures: Moderate-high (sector-specific approaches needed) Cost to implement the measures: Moderate-high (additional staff for enforcement and control needed; investments into continuous monitoring systems) Industry acceptance: Low (increase in production costs) Political feasibility: Low (increase in production costs; imposing additional control/enforcement and compulsory regulation is not popular)

Recommendation 4: Systematically green existing tax and duty system	
Why? **The rationale**	• Tax/duty exemptions/reductions can provide for powerful SCP incentives • Relatively easy to implement • Innovation and modernization come along as positive side-effects
Design, **Mode of operation**	• All taxes and duties affecting producers and consumers would be systematically screened for feasibility and desirability of introducing incentives in favor of green technologies, sustainable production and consumption. • This could include tax/duty exemptions, tax/duty reductions, as well as accelerated amortization for certain large green technology investments, but also increased tax/duty rates for technologies that are polluting (disincentives). See section 2.3 for examples of such fiscal incentives for Green Growth introduced in Malaysia. • Consumer subsidies similar to the Malaysian SAVE rebate program could also be considered*. Such programs could be financed with revenue from increased tax/duty rates for technologies that are polluting (disincentives). • In order to speed up the use of the tax incentives and keep tax fallout under control, such fiscal incentives can be timed, i.e., they are made available for a specified period of time (years) only.
Environmental impact	Medium-large (depends on demand for technologies and size of the tax incentives)
Economic/social impact	Medium-large effects on innovation and modernization in industrial production.
Preparatory work	Institutional lead: Ministry of Finance (it may be desirable to task the proposed Indonesia inter-ministerial Environmental Fiscal Reform Committee) Preparatory work needed: Systematic assessment of existing tax and duty system taking into account international experience. The already existing (apparently largely ineffective) tax exemption for environmental technology should also be evaluated and reformed as part of the proposed preparatory work. Legal requirements: Would probably be enacted/revised/fine-tuned through yearly budget legislation Time required for preparatory work: 1-2 years
Feasibility	Cost to introduce the measures: Low Cost to implement the measures: Medium-large (tax fallouts). This can, however, be addressed by limiting the duration of the incentives. Industry acceptance: High Political feasibility: Medium (tax fallouts)

* Note, however, that according to (OECD, 2011) tax expenditures have a number of limitations:

• Since it is difficult to subsidise all the environmentally beneficial alternatives to the harmful activity, tax subsidies inevitably involve “picking winners”, which may prejudice other good alternatives. For example, unlike a tax on road fuel, a subsidy for low-emission vehicles does not provide any incentive for commuters to consider alternative forms of transportation such as public transit or cycling.

• By reducing costs, tax subsidies may indirectly increase pollution. For instance, unlike a tax on vehicle emissions or road fuel, a subsidy for hybrid electric vehicles may encourage people to drive more.

• Subsidies are costly, and have to be paid for by other taxpayers, reducing their real disposable incomes. Further, since it is difficult to restrict the benefit of subsidies to those who required the subsidy to induce them to undertake the environmentally preferred activity, a significant portion of the cost typically relates to “free-riders” – those who would have undertaken the activity even without a subsidy.

• The fiscal cost of tax subsidies tends to be less transparent than direct spending, and they are often not subject to the same level of legislative scrutiny as spending programs (see recommendation 11).

• Consumer subsidies typically have a much higher implicit cost than the optimal tax required to achieve the same reduction in pollution. For example, in an analysis of European countries, it was found that applying reduced VAT rates to energy-efficient refrigerators would lead to a reduction in CO2 emissions of 1.6 million tons over an average fifteen-year life. This would cost treasuries EUR 119 million in foregone revenues, implying an implicit carbon price of EUR 73 per ton of CO2 avoided. This considerably exceeds the current carbon prices in international markets.

Recommendation 5: Energy taxation and subsidy removal	
Why? **The rationale**	• Significant reductions of energy use related pollution • Increased budget revenues; decreased energy subsidies spending • More rational and efficient use of energy sources
Design, **Mode of operation**	• As part of a comprehensive, longer term fossil fuel/CO2 policy (as outlined, for example in Ministry of Finance, 2009): ○ Continued energy subsidy reduction over time ○ Introduction of a CO2 tax on fossil fuel combustion ○ Voluntary agreements with key industrial sectors, linked to proposed new CO2 tax (see recommendation No. 15) ○ Temporary earmarking of part of the CO2 tax revenues to the proposed Indonesia Green Fund for nation-wide spending program related to smaller scale renewable energy and energy efficiency, as well as climate change mitigation/adaptation (see recommendation No. 11) ○ Introduction of additional tax incentives related to energy efficiency and renewable energy (see recommendation No. 4) ○ Make best possible use of international carbon finance, such as Adaptation Fund, Green Carbon Fund, REDD+, and bilateral and multilateral mechanisms, e.g., through the proposed Indonesia Green Fund (see recommendation No. 11)
Environmental impact	Large (CO2 emissions, emissions of other related air pollutants; rationalization of energy use)
Economic/social impact	Large (technology modernization, innovation, productivity gains, job creation, positive fiscal policy effects, etc.)
Preparatory work	Institutional lead: Ministry of Finance, Ministry of Environment Preparatory work needed: Partially detailed in (Ministry of Finance, 2009), see also recommendations No. 4, 11, 15 Legal requirements: Partially detailed in (Ministry of Finance, 2009), see also recommendations No. 4, 11, 15 Time required for preparatory work: 2-5 years
Feasibility	Cost to introduce the measures: Moderate Cost to implement the measures: Moderate Industry acceptance: Moderate (more expensive fossil energy vs. support programs for renewable energy and energy efficiency) Political feasibility: Moderate (possible resistance to new taxes vs. support support programs for renewable energy, energy efficiency and climate change mitigation/adaptation)

Recommendation 6: Green transport taxes	
Why? **The rationale**	• Provide incentives to reduce vehicle pollution and external costs to society • Efficiency gains from a modern, efficient, low emission car fleet • Enable public transport investments and more sustainable transport modes
Design, **Mode of operation**	• Consider and implement a CO2 tax on vehicles levied on imports and local producers (vehicles with high CO2 emission taxed significantly more than vehicles with low CO2 tax; zero tax for vehicles with no CO2 emissions). Nowadays car producers provide for CO2 emissions for each model and CO2 emissions can serve as good proxy for relevant car emissions. Consider and implement earmarking of all or part of such car CO2 taxes to the proposed Indonesia Green Fund (see recommendation 11) to finance spending programs related to public transport in cities, shift in transportation modes and technology change in transport. • Consider and implement an annual circulation tax on cars, differentiated according to car CO2 emissions. Consider and implement earmarking part of such circulation taxes to the proposed Indonesia Green Fund (see recommendation 11) to finance spending programs related to public transport in cities, shift in transportation modes and technology change in transport.
Environmental impact	Large (gradual shift to a vehicle fleet that is less polluting, improvements in urban air pollution)
Economic/social impact	Moderate-large, stemming mostly from proposed IGF spending (more efficient vehicle fleet, better public transport)
Preparatory work	Institutional lead: Ministry of Transport, Ministry of Finance, Ministry of Environment Preparatory work needed: Evaluation of existing vehicle taxation, consideration of good international practice, stakeholder consultation Legal requirements: New dedicated tax legislation Time required for preparatory work: 2-3 years
Feasibility	Cost to introduce the measures: Low (mostly man power to elaborate new legislation proposals) Cost to implement the measures: Moderate (vehicles with high/above average CO2 emissions would become significantly more expensive; however, the consumer has a choice to go for vehicles with small emissions) Industry acceptance: Medium (policy benefits will have to be explained) Political feasibility: Medium (possible political resistance to tax policies and resistance to policies that affect mostly the rich)

Recommendation 7: Reform and enhance existing environmental taxes	
Why? **The rationale**	• Encourage more efficient use of ground- and surface water • Encourage decreased water pollution • Provide for incentives for investing in new resource efficient technology

Design,
Mode of operation
	• Reform of water surface tax could include (could be better developed once a detailed assessment of the tax was completed)
	  ○ Imposition of tax rates that provide for effective incentives to rationalize and minimize water extraction
	  ○ Imposition of tax rates that generate sufficient revenues to allow for cost covering water resource management, including appropriate water quality sampling
	• Reform of groundwater tax could include (could be better developed once a detailed assessment of the tax was completed):
	  ○ Imposition of tax rates that provide for effective incentives to rationalize and minimize water extraction
	  ○ Imposition of tax rates that generate sufficient revenues to allow for cost covering water resource management, including appropriate water quality sampling
	• Reform of waste water discharge fees could include (could be better developed once a detailed assessment of the tax was completed)
	  ○ Harmonization of the tax base and tax calculation method for all localities
	  ○ Imposition of a tax calculation method that relates tax payment to actual discharge loads, differentiated by key pollutants
	  ○ Imposition of tax rate levels that trigger investments into technology that effectively reduces pollutant effluent.
	  ○ The Government may also want to consider earmarking of tax revenues to the proposed Indonesia Green Fund (see recommendation 11)
	• An additional consideration would be to enhance existing waste water discharge fees to include also taxes on industrial and hazardous waste. Prior to reform/introduction of these taxes, the Government could consider introducing voluntary agreements with key industrial sectors related to the enhanced waste/wastewater taxes (see recommendation 15).

Environmental impact	Significant, as less water would be extracted (therefore longer lasting reservoirs and/or faster regenerating reservoirs) and water pollution would decrease
Economic/social impact	Growth impacts small as the tax would primarily represent an investment without returns. Innovation potential moderate (new technology to reduce wastewater loads). Social effects significant (better water quality, more efficient use of water resources).
Preparatory work	Institutional lead: cooperative effort of Ministry of Environment, Ministry of Finance and relevant agencies Preparatory work needed: detailed assessment of the existing taxes; drafting of revised legislation; consultation of draft legislation with relevant stakeholders Legal requirements: revisions of existing legislation regulating the taxes Time required for preparatory work: 1-2 years
Feasibility	Cost to introduce the measures: low Cost to implement the measures: moderate (higher tax rates/revenues; investment into reduction of pollutant effluent) Industry acceptance: moderate (additional cost imposed on industry) Political feasibility: moderate (it is easier to modify an existing tax as compared to introducing a new tax; benefits of better water quality and management)

Recommendation 8: Product taxes (recycling/reuse of certain types of wastes)	
Why? **The rationale**	• Extracting reusable waste from waste steams makes economic sense • The proposed scheme would enable new industries and jobs • Significant positive impact on the environment and SCP
Design, **Mode of operation**	• An integrated system could be implemented for a number of reusable/recyclable waste streams, including for example: packaging waste (paper, glass, metals, wood, textiles, etc.); electronic & electric waste; light bulbs; used vehicles (vehicle wracks); batteries & accumulators; etc. A possible integrated management scheme including various incentives is presented below at the example of packaging waste: ○ Establishment of annual recycling targets (example: 20% for glass bottles in year 1, 30% in year 2, 40% in year 3, etc.) ○ Introduction of the extended producer responsibility (EPR) principle ○ Mandatory labeling of packaging products at import/production ○ Mandatory reporting of packaging products flows ○ Tax on packaging materials (e.g., 1-3% of value of bottled product, differentiated on environmental impact of a given packaging product) ○ Packaging tax exemption for producers/importers that can demonstrate that they have fulfilled annual recycling targets ○ Earmarking of packaging tax revenues to IGF (recommendation 11) to finance upfront costs related to the establishment of a recycling/reuse market including separate collection of relevant waste streams. Note that earmarking could be lifted once the final targeted recycling rates have been achieved. ○ Deposit refund system implemented with larger retailers ○ Integration of the waste bank schemes already in place
Environmental impact	Large (substantial reduction of municipal waste streams; high recycling rates)
Economic/social impact	Large (new industrial sectors can be established, job creation)
Preparatory work	Institutional lead: Ministry of Environment Preparatory work needed: Market assessment and stakeholder consultation; drafting of specific legislation (for example: packaging waste regulation) Legal requirements: Adoption of one piece of legislation for each waste stream, or one piece of legislation for all waste streams covered Time required for preparatory work: 2-3 years
Feasibility	Cost to introduce the measures: Low-medium (man power for preparatory work) Cost to implement the measures: Medium, decreasing over time (as recycling rates increase, tax revenues and scheme implementation costs will decrease) Industry acceptance: Usually high, once proper stakeholder dialogue & consultation has been implemented Political feasibility: High (pro-environment, pro-economy, pro-job, reduced municipal waste management costs)

Recommendation 9: Cost covering waste service, electricity and water charges	
Why? **The rationale**	• Decrease subsidies & related inefficiencies in public service provision • Fairness in resource use: the more one consumes the more one pays • Strong incentive to minimize and rationalize resource use
Design, **Mode of operation**	• Current full or near full subsidization of waste collection, electricity supply, and water supply may be politically attractive. However, consumers should know that these services are eventually paid by them all the same, i.e. through budget allocations, which in turn are financed through taxes. Awareness campaigns to demonstrate the problem at the example of the local service provider could be useful. Such information should also demonstrate how resource charges (water price, waste fees, electricity price) that provide revenues that can fully cover service provision benefit people (overall lower service costs). Further, a campaign could focus on increased fairness of a cost covering system: the more a household/company consumes the more it will have to pay, i.e. a strong incentive to rational resource use would be provided. • Cross-subsidization of household prices through higher industry prices should be avoided or removed where they exist. • Cost covering service charges are important prerequisites for industry demand in technologies and production optimization which focus on more rational use of resources. • Cost covering charges can easiest be introduced in the framework of new infrastructure projects or in case of renovation of existing infrastructure. • Note that in many countries environmental funds such as the proposed IGF (recommendation 11) co-finance separate waste collection, recycling/reuse, waste-to-energy, safe disposal, incineration, smaller scale renewables, smaller scale waste water treatment, etc. The financing of such measures is of course greatly facilitated if cost covering service charges are in place.
Environmental impact	Large (higher demand in technologies and solutions that rationalize resource use)
Economic/social impact	Medium-large (modernization, innovation)
Preparatory work	Institutional lead: Ministry of Public Works/Energy Preparatory work needed: Full cost assessment of service provider, legal basis for cost covering tariff setting, awareness campaigns, political work Legal requirements: legal basis for cost covering tariff setting Time required for preparatory work: 1-2 years
Feasibility	Cost to introduce the measures: medium (mainly man power, time & costs to overcome traditional habits) Cost to implement the measures: medium, decreasing over time (upfront costs include meters, invoicing systems, etc.; once these are in place costs are low) Industry acceptance: Medium (higher resource prices; acceptance will likely increase substantially once strategies for more efficient resource use are demonstrated) Political feasibility: Medium-low (overcoming traditional habit to provide public service for free)

Recommendation 10: Systematically green government budgets	
Why? **The rationale**	• Significant potential for environmental improvements at little additional cost • Mainstreaming green economy thinking/principles into all policy areas • Might help consolidate policies and avoid overlapping policy measures
Design, **Mode of operation**	• Elaborate and include green criteria in all relevant MoF spending programs/soft loan and loan guarantee schemes (e.g., KUR, KUMK, Ministry of SME credit line, see section 4.2). • Focus a part of relevant MoF spending programs/soft loan and loan guarantee schemes (e.g., KUR, KUMK, Ministry of SME credit line, see section 4.2) on specific green technology investments. Of course, conditions for such lending programs would have to be in line with market demand and cost/risk functions of specific technologies (is currently not the case, for example with the revolved IEPC1 loan program as discussed in section 4.2). For example, green loan schemes could stipulate use of best available technology or be restricted to environmental performance beyond compliance. • Consider mandatory inclusion of environmental performance of a company in any government co-financed bank loan assessment: loan applicants with poor compliance records would have to pay higher interest rates; serious violators would be denied credits. Downside: Such a measure would require databases of compliance violations which would have to be made available to banks. In addition, the implementation of new loan agreements would become more bureaucratic and time consuming. • Develop and implement green criteria, indicators and solutions for greening draft budgets of all government ministries and agencies during the yearly budgeting process. Systematically identify and implement areas of agency/ministry budgets which could be upgraded by incorporating green/environmental components.
Environmental impact	Large (especially if existing soft loan and loan guarantee programs would be systematically "greened"; the environmental effect of systematically greening ministry/agencies budgets is difficult to predict as no relevant information is available at this point)
Economic/social impact	Large (innovation, technology modernization, productivity gains, etc.)
Preparatory work	Institutional lead: Ministry of Finance Preparatory work needed: Revision of existing loan programs including analytical work; elaboration of guidelines for budget greening; consideration of relevant international experience Legal requirements: modification of existing rules regarding MoF loan programs; modification of Budget Law may be necessary too Time required for preparatory work: 1-4 years
Feasibility	Cost to introduce the measures: Moderate (mostly man power) Cost to implement the measures: Low-moderate (man power; training; eventually, budget greening may result in lower budget spending as overlapping spending may be reduced/eliminated) Industry acceptance: High Political feasibility: Moderate (depends on political will/interest)

Recommendation 11: Indonesia Green Fund (IGF)	
Why? **The rationale**	• Current public environmental expenditure focuses on nearly commercially viable investments only. Environmental finance market is under-developed • Human capacities in environmental finance are under-developed • Significant positive impact on the environment, climate change and SCP
Design, **Mode of operation**	• An extra budgetary IGF would be proposed (legal form: e.g., public company or specific institutional status), supervised by a Board of Directors composed of MoF, MoE, other relevant ministries and certain expert institutions and/or private sector associations. Given the size of Indonesia and its environmental challenge, a system of a national Fund and provincial funds could be considered. One Fund (system) for the entire environmental sector should be considered (therefore consider integration of the ICCTF into the proposed IGF, or, upgrading IICTF to IGF) – this would help consolidate the currently fragmented public environmental finance schemes and would be more desirable from a public finance point of view. • Revenue sources of the Fund could include, among others, those mentioned in recommendations 5-8, as well as bi- and multilateral contributions (including in particular Green Climate Fund, which could result in large Fund revenues). The Fund could also be tasked to systematically leverage and co-finance additional sources. • Priority spending areas could include for example: climate change mitigation and adaptation; waste management & reuse/recycling; green transport; water management, even nature protection & biodiversity. The Fund could co-finance pilots/innovation projects, but also the mainstreaming of certain technologies. The Fund could become a main delivery mechanism for smaller scale projects. Specific subsidy programs would be linked to established policy goals and be formulated based on need and demand as part of annual Fund budgets and long-term Fund spending strategies. The financing products and conditions could be differentiated for each support program and include grants, interest rate subsidies and soft loans. • Operational procedures would include specific procedures for project cycle management (project identification, call for tenders, project appraisal, project selection, contracting project implementation/monitoring, project evaluation), spending strategy formulation, information policy on Fund activities/achievements, as well as management procedures that comply with international requirements such as Green Climate Fund (fiduciary standards, environmental/social standards, procurement, transparency, etc.) • Good international practice in public environmental expenditure and public finance policy compliance should be implemented (section 2.3). This should include also compliance with Green Climate Fund accreditation criteria.
Environmental impact	Large potential
Economic/social impact	Large potential
Preparatory work	Institutional lead: Ministry of Environment, Ministry of Finance Preparatory work needed: Implementation of revenue sources (recommendations 5-7); elaboration/adoption of Fund legislation and operational policies Legal requirements: adoption of Fund legislation Time required for preparatory work: 1-3 years
Feasibility	Cost to introduce the measures: Low Cost to implement the measures: Low-medium (Fund administrative costs) Industry acceptance: High Political feasibility: Moderate (possible earmarking of tax revenue, establishment of an extra budgetary Fund)

Recommendation 12: Green banking and insurance services/products	
Why? **The rationale**	• Given the importance of banks in economic development, green banking services/products could have a considerable positive environmental impact • Banks can achieve a green image and thus tap into a constantly growing sustainability & health sensitive consumer segment • Banks can act as oriole models for other economic/industrial sectors
Design, **Mode of operation**	• Organize an international conference on green banking practices to collect latest good practice in the field. • Consider and implement green mortgages (reduced mortgage interest for lenders with properties that satisfy certain environmental/green building standards/certifications). • Consider and implement green bank accounts (slightly lower bank account interest rate, whereas the local bank uses the difference/money for financing green projects in the community) • Consider and implement green investment funds (rate companies listed on the stock market for their environmental/sustainability performance and offer investment fund products consisting of green leaders to customers – note that such green funds have often been outperforming traditionally rated stock baskets; in Europe, in recent years growth in green investment funds has been outperforming growth in traditional investment funds) • Consider and implement green insurance products.
Environmental impact	Moderate
Economic/social impact	Moderate
Preparatory work	Institutional lead: Ministry of Finance Preparatory work needed: Man power, relevant assessment/analytical work, consideration of international practice Legal requirements: Amendment of existing bank regulation could be considered, if necessary (most of the above mentioned options would likely not require legislative changes) Time required for preparatory work: 1-3 years
Feasibility	Cost to introduce the measures: Low Cost to implement the measures: Low-moderate Industry acceptance: High Political feasibility: High

Recommendation 13: Implementation of green procurement	
Why? **The rationale**	• Can have a large SCP impact (pollution/resource use↓; recycling/reuse↑) • Impact can be achieved at low cost with little administrative interference • Can contribute significantly to innovation and economic growth
Design, **Mode of operation**	In line with current EU Switch Indonesia project (Bauer, 2013): • The implementation of a GPP strategy, which includes the establishment of a GPP Task Force, the preparation of GPP guidelines and GPP criteria, the training of procurement officials, the implementation of GPP pilots and the development of databases of eco-friendly products. • The designation and implementation of institutional responsibilities to allow for realization of GPP. • The elaboration and implementation of GPP systems, including: GPP criteria (including use of eco-labels for GPP) and technical standards based on stakeholder consultation/involvement; inclusion of life-cycle costing in procurement decisions; GPP capacity development/training; Green products catalogues/website; GPP monitoring system; tools and support systems for companies aiming at compliance with GPP criteria; incentive system for GPP officers and GPP suppliers; control & enforcement procedures for GPP suppliers; GPP stakeholder information system. Note that it would be highly desirable to eventually extend green procurement also to procurement of medium and large sized Indonesian companies. The provision of practical experience gained with GPP would be most helpful in this context.
Environmental impact	Potentially large (pollution reduction, reduction of resource use, increase of reuse/recycling of waste materials, etc.)
Economic/social impact	Potentially large (innovation, creation of a green industry contributing to growth, creation of new jobs, increased export potential of greener products)
Preparatory work	Institutional lead: Ministry of Environment Preparatory work needed: Underway, as detailed in (Bauer, 2013) Legal requirements: largely available; legal basis and political will for specific GPP aspects may have to be elaborated see (Bauer, 2013) Time required for preparatory work: 1-2 years
Feasibility	Cost to introduce the measures: low (mostly training, preparation of guidelines/technical standards, as well as information) Cost to implement the measures: low Industry acceptance: high (some companies may lose out if they don't respond to changing demand) Political feasibility: high

Recommendation 14: Provision of SCP related awareness raising and training	
Why? **The rationale**	• Awareness raising and training represent long term investments for SCP • Adequate human capacities and awareness of the population represent a crucial factor in SCP realization
Design, **Mode of operation**	• Implement continuous capacity development, awareness raising, training and education in the environment/SCP sectors on all levels (primary, secondary, technical schools, universities, post-graduate), including for example: ○ Resource efficient and cleaner production ○ Environmental law & policy ○ Environmental finance, project preparation ○ Environmental economics ○ Green procurement ○ Eco-technology ○ Life cycle assessment ○ Sustainable consumption ○ Etc. • Elaborate guidelines for green CSR projects
Environmental impact	Indirect, significant future impacts on production, assuming that new knowledge is being applied, as well as on consumption, assuming awareness of the population is raised
Economic/social impact	Indirect, significant future impacts on production, assuming that new knowledge is being applied, as well as on consumption, assuming awareness of the population is raised
Preparatory work	Institutional lead: Educational sector Preparatory work needed: Formal education: Preparation of curricula, training/information materials, training of trainers. Informal education: awareness raising through all relevant communication/media channels Legal requirements: Time required for preparatory work: 1-5 years
Feasibility	Cost to introduce the measures: Moderate (cost of developing/integrating additional/new training) Cost to implement the measures: Moderate Industry acceptance: High Political feasibility: High

Recommendation 15: Engage in voluntary agreements with industry	
Why? **The rationale**	• Achieve eco-targets in a cost effective, flexible and time bound manner • Can be used to avoid or prepare for the introduction of new taxes, standards, norms, monitoring/BAT requirements, etc. • Positive promotional effects for participating companies
Design, **Mode of operation**	• Voluntary agreements with key industry sectors could be linked to a proposed new CO2 tax, see recommendation No 5 • Voluntary agreements with key industry sectors could be linked to proposed green transport taxes, see recommendation No 6 • Voluntary agreements with key industrial sectors could be related to proposed, enhanced waste/wastewater taxes (fines on industrial/hazardous waste/effluent), See recommendation No 7 • Voluntary agreements with key industrial sectors could be linked to proposed cost covering service charges in water supply, municipal waste management and electricity supply
Environmental impact	Significant, provided of course that the industry targets will actually be achieved
Economic/social impact	Significant, provided of course that the industry targets will actually be achieved. Likely industries will choose implementation strategies that have important economic side benefits or are well integrated with growth strategies.
Preparatory work	Institutional lead: Ministry of Environment, Ministry of Industry Preparatory work needed: Preparatory work related to recommendations 5, 6, 7, 9. Negotiation of agreement. Legal requirements: None (apart from negotiated agreement, of course). Time required for preparatory work: 1-2 years
Feasibility	Cost to introduce the measures: Low (negotiation of agreement, consultations) Cost to implement the measures: Low (monitoring/evaluating agreement implementation) Industry acceptance: High, especially if regulation can be avoided through implementation of voluntary agreements Political feasibility: High

Recommendation 16: Facilitate eco-technology transfer	
Why? **The rationale**	• New eco-technologies are constantly developed in international markets • Such technologies should be tested in Indonesia for their environmental, economic and social benefits • Imported technologies can spur the development of related domestic R&D
Design, **Mode of operation**	• Establishment of an information system on new eco-technologies available in international markets (technology properties, demo case studies, supplier info, trader info, etc.), as well as case studies of respective technology transfers and application of the technology in Indonesia (see recommendation No. 18 on web based information platform). The information system should also link to relevant databases of relevant foreign universities and technology development/assessment centers. • Make financial mechanisms available to enable &document technology transfers, including pilot projects to test technologies in Indonesian circumstances (see recommendation No. 11 on Indonesia Green Fund) • Improve the existing import tax waiver for environmental technology with a view to decrease administrative and financial hurdles for technology transfers (see recommendation 4) • Make financial support available to mainstream tested and viable technologies in Indonesia (see recommendation No. 11 on Indonesia Green Fund, as well as recommendation No. 10 as regards greening existing GOI loan programs) • Ensure cooperation and contributions of relevant Indonesian universities, technical schools, Cleaner Production Centers as knowledge centers in environmental technologies.
Environmental impact	Potentially large (new technology designed to provide for productivity and innovation gains while reducing pollution and resource inputs)
Economic/social impact	Potentially large (new technology designed to provide for productivity and innovation gains while reducing pollution and resource inputs)
Preparatory work	Institutional lead: Ministry of Environment Preparatory work needed: Man power (information gathering, etc.), see also preparatory work needed for related recommendations 4, 10, 11, 18 Legal requirements: See legal requirements for related recommendations 4, 10, 11, 18 Time required for preparatory work: 1-3 years
Feasibility	Cost to introduce the measures: Low-moderate (see also cost estimation for related recommendations 4, 10, 11, 18) Cost to implement the measures: Moderate-high (foreign state of the art technology is often expensive) Industry acceptance: High Political feasibility: High (there might be some concerns about protecting domestic technology producers)

Recommendation 17: Upgrade and mainstream eco-labelling	
Why? **The rationale**	• Functioning and widely used eco-labeling system useful for GPP • Helps changing consumer choices and consumption patterns toward SCP • Creates new export potential
Design, **Mode of operation**	• Linking eco-labels with green procurement (see also recommendation 13) • Create the basis for improving existing eco-labels by evaluating existing work/results • Mainstream existing eco-labeling processes with a view of reducing time and cost inputs, as well as optimizing bureaucratic requirements leading to eco-label certification • Ensure that the verification process especially for KLH owned type II Eco Label is in place and that the verification process is transparent and reasonable as regards administrative efforts, processes and costs. • Launch an industry campaign with the aim of mainstreaming eco-label use and getting a large number of products certified. • Implement awareness campaigns focused on consumers, including consumer advice services/media. • Enrich existing labels with additional information in order to achieve easier understating of consumers • Promote case studies of positive impacts of eco-labeling on export.
Environmental impact	Moderate – indirect impact, assuming that consumer/procurement demand will actually shift to eco-labeled products over time.
Economic/social impact	Moderate – indirect impact, assuming that consumer/procurement demand will actually shift to eco-labeled products over time.
Preparatory work	Institutional lead: Ministry of Environment Preparatory work needed: Evaluation of existing schemes. Reforming certification procedures. Planning and implementing an industry campaign. Legal requirements: Legal basis for revised labelling criteria may have to be elaborated. Time required for preparatory work: 1-3 years
Feasibility	Cost to introduce the measures: Moderate (manpower to upgrade and reform eco-labels) Cost to implement the measures: Moderate – high (company investments in getting their products certified) Industry acceptance: Moderate (high in companies that could likely profit from certification, e.g. if new export possibilities can be realized or if demand for labeled products/services from GPP will pick up) Political feasibility: High

Recommendation 18: Web-based information platform	
Why? **The rationale**	• Lower companies' transaction cost for getting relevant information • Increase transparency and accountability in policy implementation • Awareness raising and capacity development of all interested stakeholders

Design,
Mode of operation
	• Establish an one-stop online information platform on SCP, providing free, 24/7 access to relevant information in a practical and user friendly format. The website would ideally differentiate relevant information for producers and relevant information for consumers (one website with two sections or two websites).
	• Include information related to:
	  ○ sources of finance for SCP, including details on financing conditions, eligibility criteria, application procedures, contact details for specific information
	  ○ eco-taxes and SCP related tax exemptions/reductions (see recommendations 4-9)
	  ○ SCP related policies and legislation, including legal requirements for companies (see recommendations 1-3)
	  ○ Green procurement (see recommendation 13)
	  ○ eco-labeling (see recommendation 17)
	  ○ voluntary agreements (see recommendation 15)
	  ○ recent expert studies and other relevant reports and background literature
	  ○ SCP service providers and stakeholders including links and contact details
	  ○ education and training (see recommendation 14)
	  ○ PROPER scheme (see recommendation 19)
	  ○ green awards (including past awards and links to companies)
	• Continuously maintain and upgrade the information platform and ensure that relevant stakeholders get regularly informed about new platform content relevant to them (e.g., via e-newsletters, interactive tools)

Environmental impact	Medium – indirect impact. Note, however, that appropriate information is a crucial prerequisite for reaching environmental impacts eventually.
Economic/social impact	Medium – indirect impact. Note, however, that appropriate information is a crucial prerequisite for reaching economic and social benefits eventually.
Preparatory work	Institutional lead: joint effort of Ministry of Environment, Ministry of Industry, Ministry of Finance and Ministry of SME Preparatory work needed: Information gathering & preparation, establishing the platform, creating stakeholder networks Legal requirements: None Time required for preparatory work: 1 year
Feasibility	Cost to introduce the measures: Low (mainly manpower) Cost to implement the measures: Low (mainly manpower) Industry acceptance: High Political feasibility: High

Recommendation 19: Further upgrade PROPER scheme	
Why? **The rationale**	• PROPER scheme is already well established and accepted • Provide for more meaningful assessment and rating • Further integrate with other policy instruments
Design, **Mode of operation**	• Include new criteria for PROPER rating which are based on hard, environmentally relevant data, such as actual emissions, amount of resources used, amount of waste generated (municipal as well as different types of industrial and hazardous wastes), administrative records (public complaints, inspection reports, administrative penalties, etc.). • This will lead to industry sector specific sets of criteria. • Gradually develop sector specific benchmarks of such hard data. Once benchmarks are available, plot company specific data to such benchmark data in order to document company performance, identify areas for improvement and to illustrate progress achieved over time. • Ensure that most/all major companies in main industrial sectors are included in the PROPER scheme. • Use modern web based tools to collect, report and disseminate PROPER data/information. Elaborate and publish success stories, sector specific best practice guides, information material related to compliance promotion (see recommendation 1). Publication could be done using the proposed information platform (see recommendation 18).
Environmental impact	Significant (company specific recommendations can be formulated; extended coverage of the scheme; improved specific information services for companies)
Economic/social impact	Medium, indirect impacts (assuming that innovation and technology investments will be triggered)
Preparatory work	Institutional lead: Ministry of Environment Preparatory work needed: System of standardized monitoring will be needed at company level including key pollutants generated and resources used. Technical standards for new criteria as well as sector specific benchmark/guidelines will be needed. Web-based information system will be a prerequisite. Legal requirements: Legal basis for standardized monitoring at company level Time required for preparatory work: 1-3 years
Feasibility	Cost to introduce the measures: High (standardized monitoring at company level) Cost to implement the measures: Medium (manpower for assessment/control work, maintenance of the web-based information system) Industry acceptance: Medium (there may be opposition to proposed standardized monitoring at company level) Political feasibility: Medium

Given the multitude of recommendations it may be useful to make an attempt to prioritize the recommendations. We try to do this by ranking different recommendations according to the following factors:

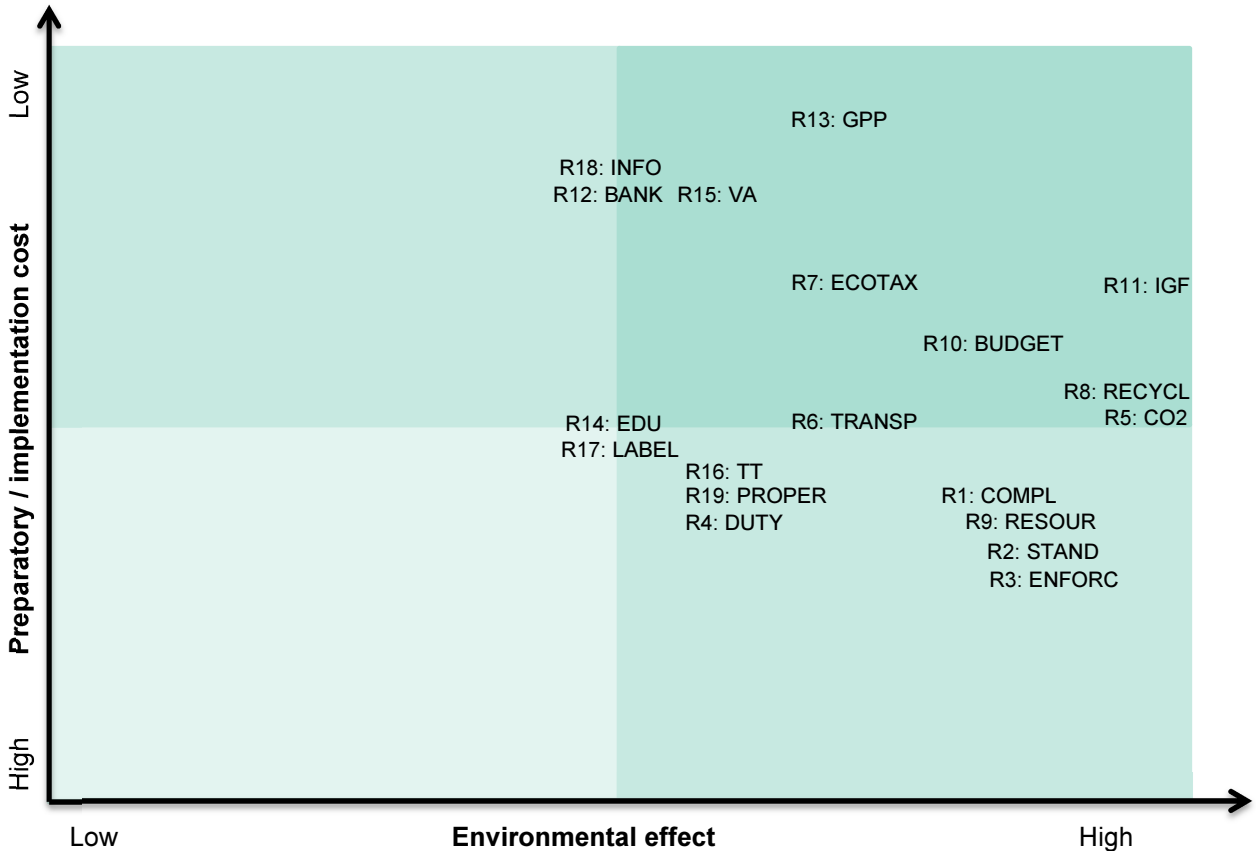
- Environmental effect (effect on achieving SCP)
- Economic/social benefits
- Preparatory/implementation costs
- Industry acceptance
- Political feasibility

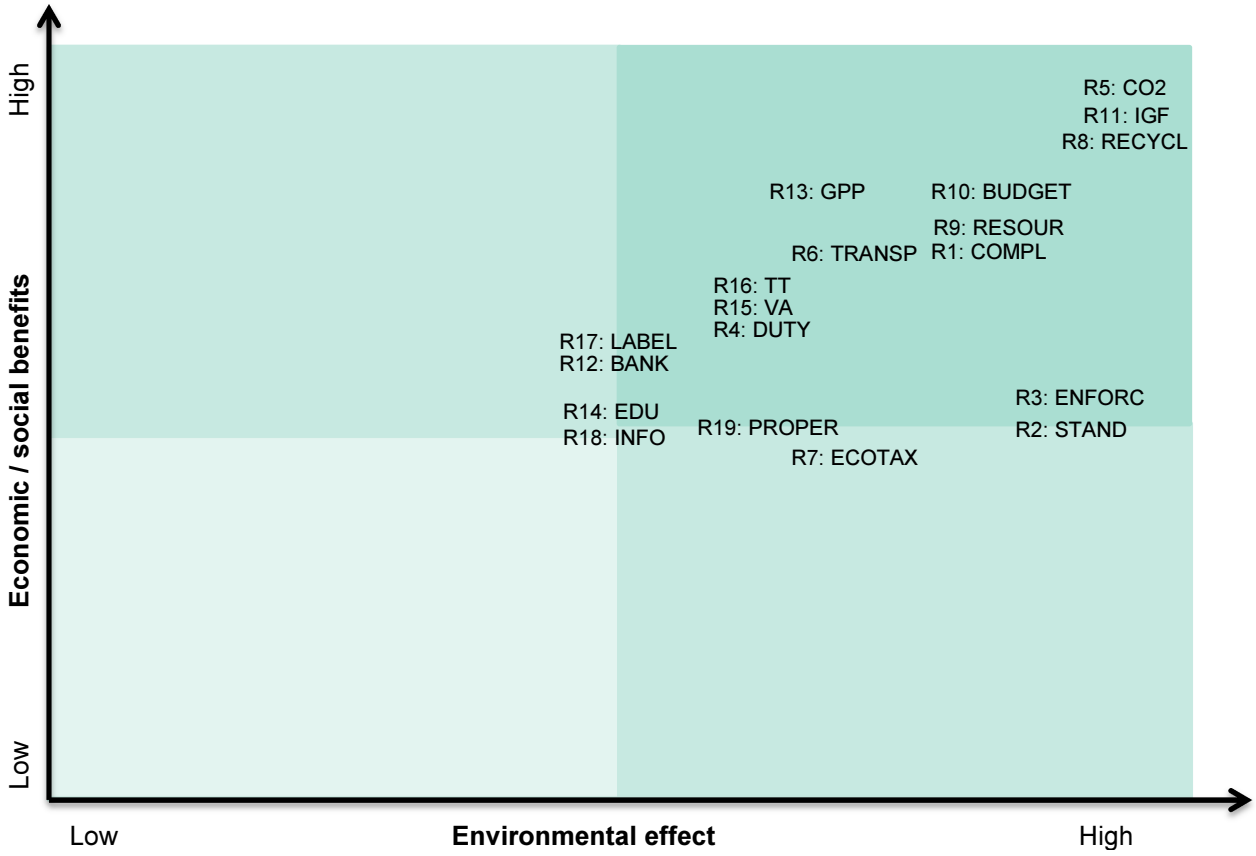
Of course below **ranking represents the authors' subjective views and should be interpreted accordingly**.

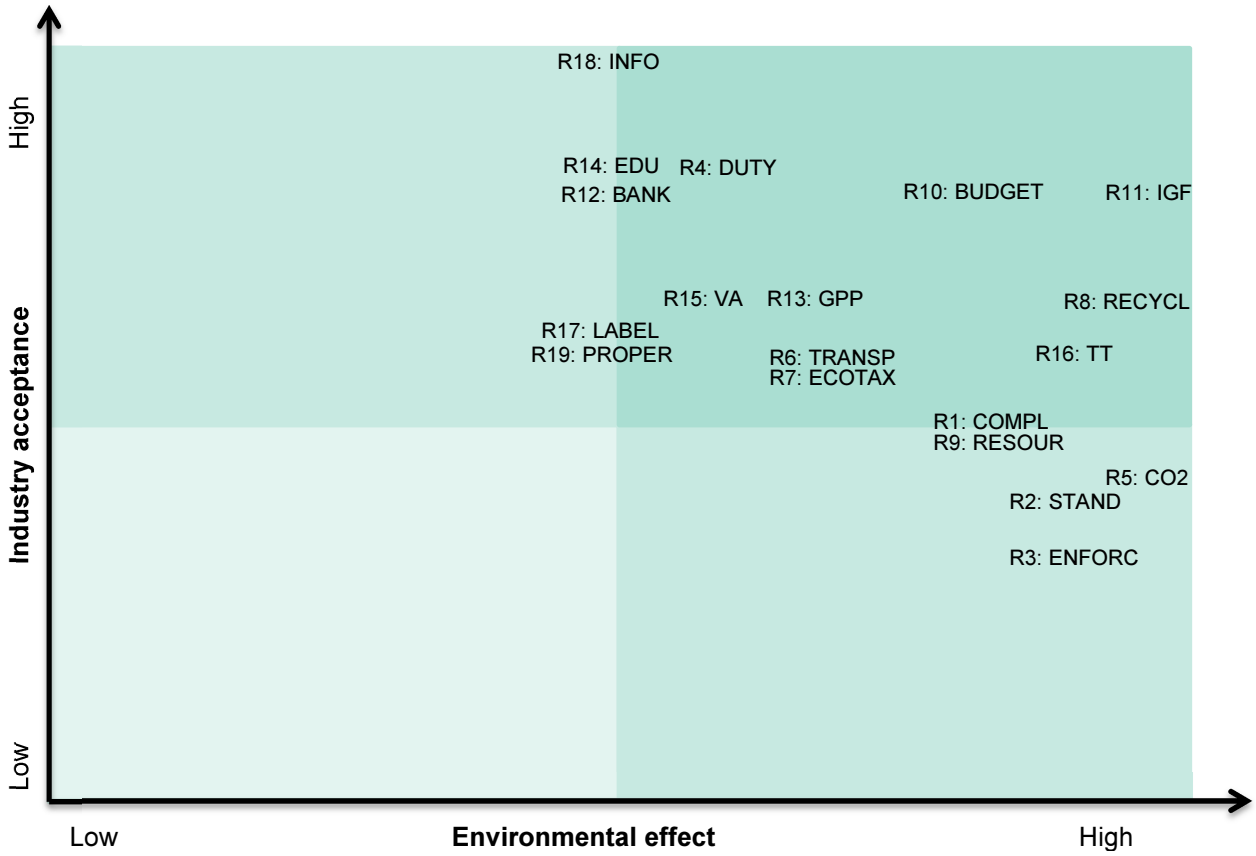
In the rating below, the authors' assume a proper implementation of the recommendations. In other words, inefficient or incomplete implementation of a recommendation would result in differing effects/costs/feasibility.

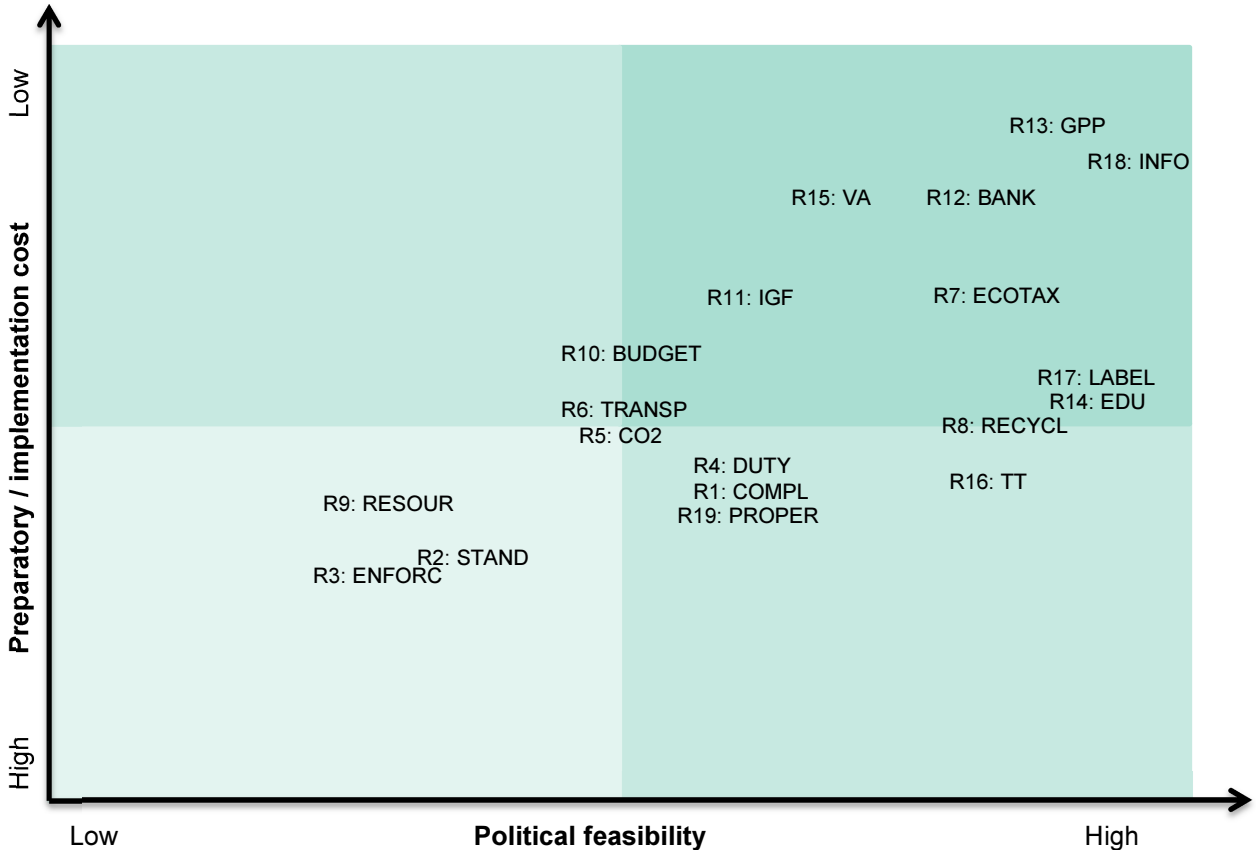
Recommendation		Environmental effect	Economic/social benefits	Preparatory/implementation costs	Industry acceptance	Political feasibility
		1 = lowest/most expensive, 10 = highest/cheapest				
1	Measures to increase compliance with law	8	7	4	5	6
2	Measures to rationalize norms and standards	9	5	3	4	4
3	Measures for better control and enforcement	9	5	3	3	3
4	Systematically green existing tax and duty system	6	7	4	8	6
5	Energy taxation and subsidy removal	10	9	5	4	5
6	Green transport taxes	7	7	5	5	5
7	Reform existing environmental taxes	7	4	7	6	8
8	Product taxes (recycling/reuse of certain types of wastes)	10	9	5	7	8
9	Cost covering waste service, electricity and water charges	8	7	4	5	3
10	Systematically green government budgets	8	8	6	8	5
11	Indonesia Green Fund	10	9	7	8	6
12	Green banking and insurance services/products	5	6	8	8	8
13	Implementation of green procurement	7	8	9	7	9
14	Provision of SCP related research, education and training	5	5	5	8	9
15	Engage in voluntary agreements with industry	6	7	8	7	7
16	Facilitate eco-technology transfer	6	7	4	9	8
17	Upgrade and mainstream eco-labeling	5	6	5	6	9
18	Web-based information platform	5	5	8	10	10
19	Further upgrade PROPER scheme	6	5	4	5	6

The authors' assessment/ranking is plotted in the following graphs.

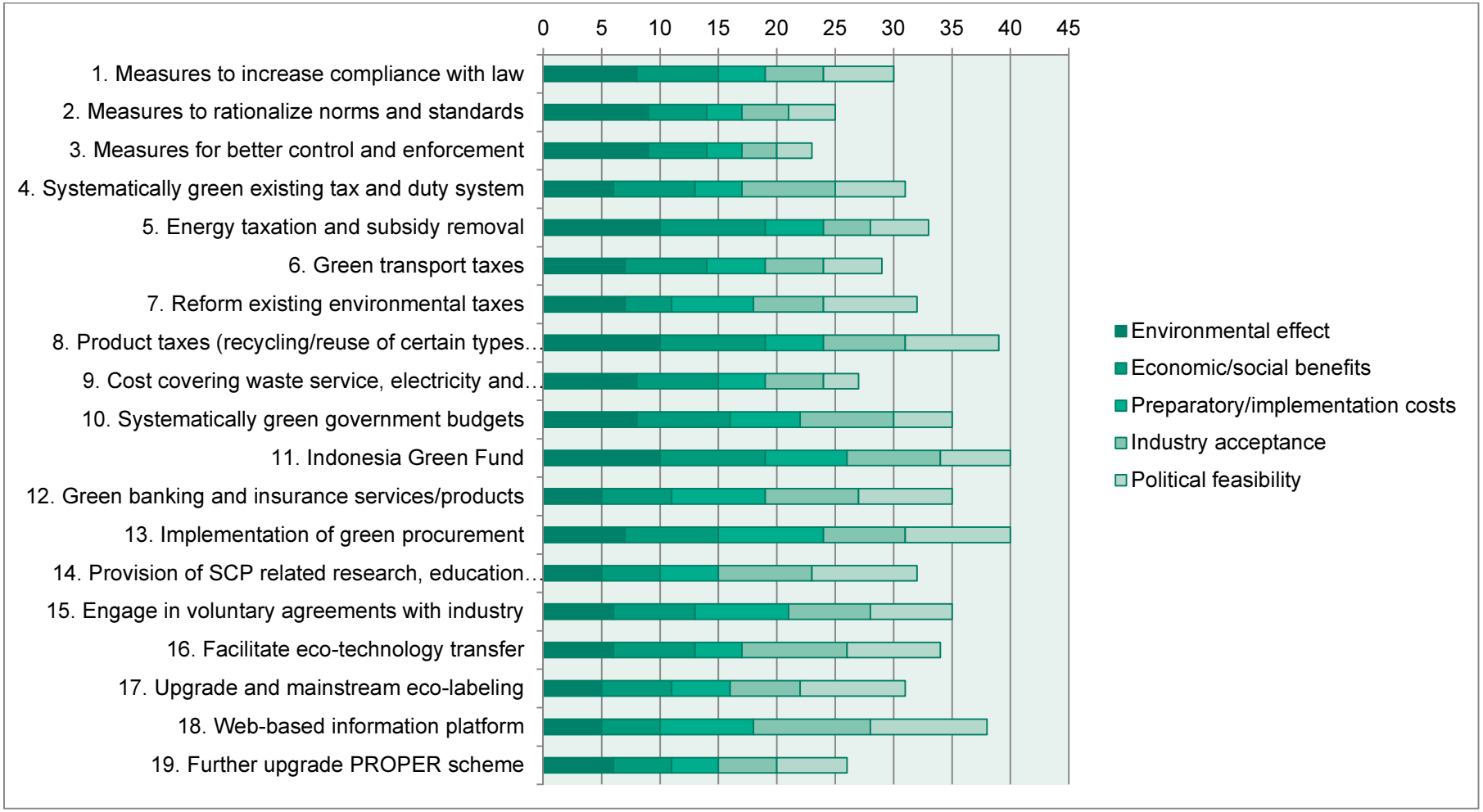





High
Industry acceptance
Low
R18: INFO
R14: EDU
R4: DUTY
R12: BANK
R10: BUDGET
R11: IGF
R15: VA
R13: GPP
R8: RECYCL
R17: LABEL
R19: PROPER
R6: TRANSP
R7: ECOTAX
R16: TT
R1: COMPL
R9: RESOUR
R5: CO2
R2: STAND
R3: ENFORC
Low
Environmental effect
High


Low
Preparatory / implementation cost
High
R13: GPP
R18: INFO
R15: VA
R12: BANK
R11: IGF
R7: ECOTAX
R10: BUDGET
R17: LABEL
R14: EDU
R6: TRANSP
R5: CO2
R8: RECYCL
R4: DUTY
R1: COMPL
R19: PROPER
R16: TT
R9: RESOUR
R2: STAND
R3: ENFORC
Low
Political feasibility
High

The following graph depicts the authors' cumulative rating of the desirability and feasibility of recommendations, assuming that all criteria (environmental effect, economic/social benefits, preparatory/implementation costs, industry acceptance and political feasibility) are equally important.



Please note again that the **ranking represents the authors' subjective views and should be interpreted accordingly**.

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ANNEXES

Annex 1: Terms of reference

TERMS OF REFERENCE

Jakarta, 7th July 2013

Sustainable Consumption and Production: Policy Support - Indonesia
EuropeAid Contract DCI-ASIE/2011/279-503

TERMS OF REFERENCE (No. 1306-SP03)
for a Team of Non Key Experts (# 12 and 13) to

Propose Incentives and Policy Instruments for Promotion of Sustainable Production

1. Background Information

1.1. The SWITCH Asia Policy Support Component Indonesia

The aim of the EU-funded SWITCH Asia programme is to promote Sustainable Consumption and Production (SCP) in Asia. The programme works simultaneously on the ground, with producers and consumers, and at the level of policy-making through support for formulation and implementation of SCP-related policies. The SWITCH Asia Policy Support Component was established in 2011 to complement the programme to strengthen the formulation and implementation of SCP-related policies in Asia.

Based on its successful performance in SCP policy application, Indonesia was selected as one of four pilot countries for receiving technical assistance to further strengthen the development and implementation of its policies, structures and action plans on SCP through the SWITCH Asia Policy Support Component.

The project is hosted by the Ministry of Environment (MoE) and implemented from February 2012 until January 2015.

Overall, the project aims at strengthening the development and implementation of national SCP policies aligned withthe country's national development policy of inclusive growth and environmental harmony. It follows a multi-stakeholder approach at three levels of intervention:

- ***Macro level:*** create favourable conditions for SCP policy review and enforcement through capacity strengthening at the government level on SCP-related policy planning and implementation.
- ***Meso level:*** Involve important intermediates (e.g. universities, think tanks, media etc.) that help to catalyse the effects in favour of other stakeholders and make them responsible co-drivers of the change process,
- ***Micro level:*** Facilitate the development of strong and intensive working relationships among all relevant stakeholders: Manufacturing industries, service companies, local governments and civil society to motivate a change in their awareness on SCP matters,

The Policy Support Component in Indonesia focuses on the macro level, but maintains linkages to both the micro and meso level to achieve the project-specific purpose of promoting an integrated and coordinated approach in developing and implementing the national policies on SCP.

In addition it is expected that the supported industry sectors will experience improvements in competitiveness by virtue of cost reductions derived from more efficient resource use and/or reduced pollution, and from development of environmental-friendly products that can serve new markets, including export markets.

The project has **three components**, each of which a result area of its own:

1. **Creating the Framework for a Consolidated National SCP Policy:**
   This Component aims to engage all national stakeholders to strengthen the consolidation of SCP policies through increased communication and coordination among all parties such as government at central and local levels as well as non-governmental stakeholders, such as the private sector and NGOs, universities and media as well as the general public.

2. **Support to SCP Policy Implementation:**
   Component 2 will strengthen the Ministry of Environment and selected stakeholders to contribute to the implementation of the National SCP Action Plan, to monitor the achievements against milestones and to jointly optimise the MoE's SCP account.

3. **Financial mechanisms, incentives and policy instruments for SCP promotion.**
   Identifying the right mix of (in particular financial) instruments to optimise the implementation of Indonesia's SCP policy.

1.2. Specific Background of this Sub Project

Indonesia's recognition of the importance of sustainable use of its resources and to provide incentives and other policy instruments has been growing substantially in particular in the last 7 years. Based on the principles of the first and second Medium-Term Development Plans, many initiatives have been launched by the government and the private sector, including among others: Clean Energy Initiative (REFF Burn); Clean Production initiatives and the establishment of the Indonesian Cleaner Production Centre (ICPC); design of SCP-related strategies and action plans; monetary incentives to improve on sustainable development issues and non-monetary incentive initiatives (recognition, publication, technical facilitation etc.); development of eco-labeling systems and certifications; pollution abatement schemes and environmental regulations; design of criteria for Environmentally Sound Technologies (EST) and a National Action Plan addressing Climate Change.
However, a great number of businesses in Indonesia, as elsewhere, are not conscious about the potential positive effects of sustainable production. It is a common perception that "green" automatically means "more expensive". However, properly designed environmental regulations, incentives, taxes and standards can trigger innovations, which result in not only lower environmental impact but also lower costs, better product quality, and enhanced competitiveness. Improved resource productivity makes companies more competitive, not less. At the same time, consumers can get more and better products for less money.

This TOR focuses on initiatives with such co-benefits by identifying incentives and regulations to materialize the vast dormant potential. However, in many cases a more sustainable production will meet financial barriers, either in terms of insufficient access to finance, whether or not the pay-back

time is very low, or higher production costs. Therefore, the Sub Project will, as a secondary priority, also study incentives to overcome such barriers.

Most often a single incentive is not sufficient, and the challenge is thus to identify the right mix of instruments to optimise the implementation of SCP policies. To identify the best policy mix for Indonesia, the Sub Project will review practices and SCP tools applied in other countries, e.g. OECD Member States, such as Europe, Singapore, Japan, and Korea and countries of comparable size and challenges, such as India and China. In particular, ways of co-financing through the private sector, such as pioneered in Scandinavia and the UK, shall be taken into account for the study.

SCP is a complex subject. Financial instruments to promote SCP must be put into the bigger context of overall macroeconomic policy. To finance the SCP policies in the context of the ambitious Economic Masterplan, it is necessary to support the foreseen fiscal and subsidy reforms, which is why close collaboration with the Ministry of Finance should be sought.

There are several reasons that money for SCP investment is scarce at SME level. It lies in their nature that their capital is low and their focus therefore is on short-term gains. As the education level in SMEs is relatively low, many smaller and micro entrepreneurs are not aware of the benefits that resource efficiency can bring, or that green supply chains will be more and more requested and that it is advantageous to be among the first movers.

Indeed up-front investment in new technologies may be essential to make the production processes more sustainable. Those may be costly but can be quickly amortised from savings on resources costs and environmental costs. However, if interest/awareness is lacking, and on top collaterals needed for a credit are already bound or not sufficient, SMEs do not get access to sufficient funding for such up-front investments and lose interest in SCP. Banks usually want to get approx. 125% of collaterals which small companies do not have or those they have are already in use, so no further access to finance is possible.

Often, other elements of the necessary enabling framework for SMEs are absent or counter-productive, e.g. reluctance of banks providing loans to SMEs, reluctance of banks to provide loans for energy savings or cleaner production in general.

The assessment of policies and incentives in Indonesia can be based on studies which have been recently performed or will be conducted in the near future.

GIZ PAKLIM project has performed a study on "National Appropriate Mitigation Action, Green House Gas Emission Reduction: Voluntary Partnership Agreement Concept" in Indonesia. In this study various concepts of incentives have been discussed based on interviews with Indonesian government and other stakeholders as the industry. The concepts of incentives analysed include: subsidized audits, financial incentives for investments, subsidized capacity building, and awards.

SCP project has performed a baseline study on existing SCP policies and SCP tools in Indonesia. Regulations and incentives like Green Public Procurement, Eco labels, PROPER rating system, Green Industry Award, mandatory CSR, ADIPURA, and others have been discussed.

In June 2013 the GIZ PAKLIM project will conduct a study on non-economic incentives in Indonesia and a second study on direct investment subsidies for Green Investment. The results of these studies shall become part of this more comprehensive study.

2. Objectives

Incentives and policy instruments for the promotion of sustainable production in the Indonesian context shall be identified and examined, and public consultations shall be held to ensure broad consensus on the findings.

The Sub-project "Incentives and Policy Instruments" is related to following components, result areas and activities of the OWW:
Component 3:
3.1
3.2

3. Scope of Work

3.1. Beneficiary, other stakeholders and target groups

KLH, MoF, MoI, other ministries, Kadin, industry, industrial associations

3.2. Key issues to be addressed

The overall issues to be addressed by this Sub Project are two:

- How can incentives and policy instruments improve an enabling framework, which will encourage innovation in industries and related technology institutions to ensure sustainable production?
- Which legislation is conceived as creating burdens for industry? Where and how would there be a need for improving policies and policy tools?

This study shall cover all types of incentives and policy instruments, economical (including financial) and non-economical incentives and disincentives. It shall cover policy instruments focusing on the industry, but also on the consumer demand (e.g subsidies to exchange CFC containing fridges with CFC free fridges).

The developed recommendations shall comply with the *Triple Track Plus One* Strategy (pro-growth, pro-job, pro-poor and pro-environment) and the Economic Masterplan (MP3EI).

Attracting sufficient private investment will be challenging and will require establishing independent sectoral regulators, strengthening the powers of existing regulators, and better coordination between national and local authorities. Given the limited scope of the Sub Project, synergies should be sought whenever possible. For capacity strengthening and actual implementation and disbursement of the financing instruments, in particular at decentralised levels, it may be necessary to seek collaboration with other organisations, such as the UNEP, IFC or KfW, who are already operating in this field (e.g. sustainable energy finance, or practical actions addressed to reduce or remove policy, finance and technology-related barriers).

Although, all incentives and disincentives shall be analysed, a couple of environmental taxes and subsidies shall be selected for detailed elaboration and promotion, as taxation of resource use is a key market based instrument for enhancing resource efficiency. For illustration two examples are briefly described here:

- A tax on water consumption in industries. This would be a mere penalty tax and shall therefore be coupled with information to industries on how they can reduce water consumption cost-effectively. The primary objectives are: To increase the awareness of resource efficiency in industries, save water resources, and increase learning on how resource taxes are designed and managed.
- Subsidies and taxes on consumer goods; i.e. a subsidy on efficient refrigerators and a tax on refrigerators with high electricity consumption, encouraging consumers to purchase more efficient refrigerators. Reduced energy consumption has several benefits: Good for the fiscal budget (less energy subsidies), good for the trade balance (less fuel import), good for low-income consumers (access to cheaper refrigerators), and good for the environment. Furthermore, it will have a huge potential for increasing public awareness.

Other incentives to be considered, but not restricted to, are awards, direct investment subsidies for "green" investment, the Indonesian "proper" assessment, subsidized training and coaching for industries, subsidized consumption of green products.

Feedback from SMEs has shown that a key problem is often that even if policy incentives exist, capacity problems within the public system prevent SMEs from accessing these incentives. Possible solutions could be designing loans at better conditions (such as KfW, ADB).

Different approaches of implementation of incentives in micro, small, medium, large industries shall be discussed. Also possible differences in approaches to national industries and international industries / industries managed on international standards shall be assessed.

3.3. Methodology

This Sub Project will build upon Sub Project SP01 ("Assess the state of SCP policies and tools in Indonesia"), which will have produced an inventory of current SCP policies and tools, and recommended how SCP polices and tools may be further developed and better implemented. It shall also build on the results of the pre-studies of the PAKLIM project "Assessment of existing non-economic instruments as incentive scheme for industrial sector in Indonesia" and "Analysis of criteria for the design of stimulus package by the Ministry of Industry". The results of these studies shall become part of this overall study.

This project will be co-financed by GIZ PAKLIM and SCP project. The sub-project leader and a junior expert will be provided by the SCP project while GIZ PAKLIM will finance a national environmental expert.

Prior to commencing the Sub Project a few focus commercial sectors will have been selected on the basis of selection criteria. Potential focus sectors being considered are: Textiles, paper, electronics, green buildings, green tourism, and cement.

The Sub Project will undertake a review and analysis of international experience and lessons learned that may be applicable in Indonesia. This will take the form of a global study of lessons learned for green development, particularly on SCP-related themes. The aim is to find out what has worked and why in various places, so as to identify good ideas that might work in Indonesia, and to appraise them for potential use there. Options include comparing various fiscal policies, rigorous minimum standards, enforcement and voluntary measures, with real-life information from various countries.

An overall guiding principle will be to identify and focus on success stories, and then expand from there.

In developing proposals for financial incentives, it may be beneficial to cooperate with ADFIAP (Association of Development Finance Institutions in Asia and in Pacific, Manila), IFC, ADB, and KfW. One among several aspects, in which these institutions have pertinent and solid experience, is how to tailor financial incentives, so that they reach SMEs and poor consumers.

In addition to above desk research and interviews, at least one policy dialogue forum and consultations shall be conducted. The Sub Project shall organize such on-site dialogue sessions in Indonesia, where practitioners and specialists, former/current high-level policy makers, and representatives of reputed universities and think tanks shall be invited to exchange opinions and comment on the preliminary findings. Also representatives of the private sectors and spokespersons of the SMEs/cooperatives as well as other donor agencies active in this area should participate in the multi-stakeholder dialogue forum.

To understand aspirations of the private sector with regard to incentives as well as the hampering factors for their materialisation, a diagnostic survey at the industry-side with particular focus on SMEs shall be conducted early in the Sub Project. It shall be combined with a gap analysis and level of absorption of the existing incentives. Potential solutions may include actors at all levels.

Out of this wealth of experiences and ideas, priorities shall be set in close coordination with the key stakeholders, in particular Ministry of Environment and the Ministry of Finance. In particular, it is essential to weight the suitability of the instruments in terms of the immense size of the country, number and nature of SMEs, possibility of easy disbursement and access to finance, enforceability etc.

Important will be to assess innovative instruments which are feasible to be implemented in Indonesia.

A final workshop will be held in Jakarta to communicate the findings, and to define the follow-up mechanism (decide on priorities, targets, sequence) and the feed-back into the policy development process.

3.4. Results to be achieved by the Experts

Outcome
A study on incentives and policy instruments for the promotion of sustainable production in the Indonesian context shall be conducted and the public will be informed on the results.

Outputs/Deliverables

1. Report on international and national lessons learnt regarding SCP incentives and policy instruments
2. Description of existing instruments in Indonesia
3. Evaluation of instruments appropriate for Indonesia
4. Report on the result of public consultations
5. Recommendations on incentives/instruments valuable for Indonesia and the further policy process

3.5. Tasks to be performed

The Sub Project will conduct the following tasks:

1. Review and analyse international experience and lessons learned that may be applicable in Indonesia
2. Review existing incentives in Indonesia
3. Conduct a diagnostic survey at the industry-side with particular focus on SMEs, assessing the enforcement and acceptance by the private sector by visits of related institutions and/or information gathering workshops
4. Examine the feasibility of a few well-selected and concrete environmental taxes, subsidies, financial and non-financial policy tools
5. Organize and conduct policy dialogue forums and consultations
6. Prioritize incentives and policy instruments in close coordination with the Ministry of Environment and the Ministry of Finance
7. Organize and conduct a final workshop in Jakarta and attend a media briefing event
8. Present all findings in a final report.