



METABUILD

Resource Efficient Supply Chains for Metal Products in Building Sector in South Asia

Policy Briefs on Resource Efficient Cleaner Production and Report on Regional Policy Dialogue



Bangladesh



Nepal



Sri Lanka

Promoting resource efficient cleaner production (RECP) in metal SMEs in the building and construction sector in Bangladesh, Nepal & Sri Lanka

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POLICY BRIEF

Promoting resource efficient cleaner production (RECP) in metal SMEs in the building and construction sector in Bangladesh



Bangladesh

Background

Bangladesh was named by Goldman Sachs¹ as likely to be among the largest economies of the 21st century highlighting the rate of growth in Bangladesh industries, considering that now the 63 percent of the population are farmers. With this motivational statement, the Government of Bangladesh (GOB) is nowadays in a race against time concerning growth acceleration, poverty reduction, income inequality reduction and regional disparity reduction.

To reach this development goal, the GOB is creating productive employment in the manufacturing and organized service sector, transforming the unskilled low-income working force in informal activities into productive skilled employees with the help of small and medium enterprises.

The **Small and Medium Enterprises (SME)** play a primary role in the productive workforce transformation. In Bangladesh, these businesses shape the economy of the country working as individual organizations or as clusters. SME clusters are concentration of enterprises producing similar products or services creating horizontal and vertical economic relations.

than 90% of the industrial enterprises in Bangladesh are SMEs, contributing to more than 30% of the country's gross domestic product (GDP), and providing employment to 4 out of 5 industrial workers. Because of the high concentration of industries in SME sector, the GOB set a target to increase the SME sector's share in GDP by at least 40% within 2021.

Clusters are an important source of employment and income in the grassroots levels as they create positive externalities and enable growth in numerous business sectors.

Among the SME clusters in Bangladesh, the secondary sector (industry and manufacturing), owns 45.7% of the total number of individual SMEs establishments and between 2011 and 2012 it provided the country with the second largest percentage to their Gross Domestic Product (GDP) with 31.2%.

The secondary sector involves transformation of raw materials into products used for commercial exchange. This is why the secondary sector is considered to be the engine of developing economies. In Bangladesh, this includes wood, coal and metals; among these the metal industry is the second largest. The metal manufacturers combine efforts to produce products for the engineering sector, construction sector, automobile industry, steel manufacturing and many infrastructure projects.

1. The Goldman Sachs Group, Inc. is an American multinational investment bank and financial services company headquartered in New York City (www.goldmansachs.com)

Metal SME sector in Bangladesh is a significant component of the market. When talking about clusters, the metal SME have 50.9% of the total number of individual establishments, they are responsible for the 35.5% of national employment opportunities and of the 47% of the Gross Value Added (GVA).

Regarding energy consumption matrix the secondary sector in Bangladesh uses 47.7% of the country's total energy, with that number expected to rise to 50% by 2030. Within it, the metal industry is the second largest consumer with 121.5 billion cubic meters of natural gas, from 708.9 billion cubic meter production.

Since Bangladesh is a developing country, this number might be attributed to the sector growth; but most of the substantial energy waste in the SME clusters and individual enterprises is due to the use of old technology, energy loss and poor energy management.

In Bangladesh, energy comes mainly from natural gas consumption and the constant depletion of the national reserves which result in increased energy prices. The GOB is reaching to a point where they cannot afford subsidies in this sector as by now it is already 90% of the total state budget.

With increasing energy consumption, increasing energy prices and low energy efficiency the GOB is facing serious challenges before being able to think about future development. This is why the **Resource Efficiency and Clean Production (RECP)** approach promoted by **METABUILD** is one of the most promising solutions adopted.

The **METABUILD** project is a 4-year project supported by the European Union under the SWITCH Asia Programme. This programme emphasizes sustainable consumption and production SMEs. The program objectives are to create improved production processes of metal components for the building and construction sector in Bangladesh, contribute to improved environmental quality in the target locations and create improved working and living conditions in the target countries. To reach all these goals **METABUILD** is adopting **RECP** measures in SMEs that operate in Bangladesh's building and construction sector.

SMEs are one of the most important groups regarding economic activities worldwide, thus they address diverse economic sectors and have important social they have the tendency to start a speeded up economic growth process.

In contrast to this, due to their size and a limited resource capacity, SMEs do not always have the most sustainable environmental behaviour. The performances of the SMEs are having negative consequences and unless there is a regulatory system growing, Bangladesh metal SMEs will continue to move in this direction.

This is the whole reason behind for the appliance of **RECP**. This approach conveys the "continuous application of preventive environmental strategies to processes, products and services in order to increase the efficiency and reduce risk to humans and the environment" (UNIDO, 2017).

RECP has three main approaches, improve the productive use of natural resources, minimize the impact of production in nature and support communities and reduce risks.

The benefits of adopting RECP measures are increased productivity and profitability as well as an improved environmental and social performance. This includes reduced emissions and waste generation as well as safer and healthier working conditions. By adopting RECP SMEs are enabled to cope with limitations in existing infrastructure (e.g. power and water supply) and to use scarce resources more efficiently.

In the case of the GOB formulating policies that will work coherently and effectively with the political instruments already in play is very important for the reduction of the energy consumption of the manufacturing business operation. The main aim of these new frameworks is to make the energy-intensive industry low carbon intensive in order to help not only the climate agenda but gain financial benefits from the secondary sector, save costs and increase productivity. The metal SME sector is still a niche with the need for improvement and a source of potential energy saving.

In this policy brief, the METABUILD team, therefore, sketches the current status of Bangladesh's RECP policy and regulation, presents a problem analysis and provides recommendations for strengthening RECP among metal SMEs in Bangladesh building and construction sector. The policy brief is based on desk research and inputs from Bangladesh's Dhaka Chamber of Commerce and Industry (DCCI).

Current status of RECP regulation

Concerning the RECP measures, there are no direct policies or contractual statements that force enterprises to convey a low environmental impact production in Bangladesh.

According to the last Paris Agreement Bangladesh is a country with no GHG-emissions reduction commitments. Regardless of this, the GOB is working with their Department of Environment and the Ministry of Environment and Forest to create connections between the relevant policies and action plans and strategies existent and to be created.

The Government of Bangladesh has formulated in the 1990s the **Environmental Conservation Act** (1995) and the **Environmental Conservation Rules** (1997) in connection to the **National Environmental Policy**, which was formulated in 1992.

Since 2008 the **Ministry of Power, Energy and Mineral Resources (MPEMR)** has issued a plan with a set of policies including an Interim Action Plan for improving Energy Efficiency & Conservation, the Gas Act 2010 and a Power System Masterplan 2016, released by SREDA. The **Sustainable and Renewable Energy Authority (SREDA)** Act of 2012 focuses on cutting the energy consumption of energy-intensive industries, including steel, nonferrous metals, construction materials, and chemical processing. All the policy (Small and Medium Enterprises Foundation, 2013) (Economic Adviser's Wing Finance Division, Ministry of Finance, 2017) (Bakht & Basher, 2015) (Energy Efficiency Engagement, 2017)

(SREDA and Ministry of Power, Energy and Mineral Resources., 2015) programs, legal documents (Act, Rules, Regulations, Circulars or Standards) and frameworks are established under the Energy Efficiency and Conservation Master Plan (EECMP). In the Masterplan, the Government aims to improve energy intensity (national primary energy consumption per gross domestic product/GDP) in 2030 by 20% compared to the 2013 level. That means that a total of 95 million is expected to be saved in that period. Demand for primary energy in Bangladesh is expected to triple in 2030 and the country is expected to step from a labour-intensive industry to an energy-intensive one due to its rapid development. Furthermore, it is to be expected that the reserves of gas and coal will decrease in 2021-22, underlines the urgency of resource efficient cleaner production and the use of renewable energies.

Manufacturing Industry accounts for 47.8% of the total primary energy consumption. The great inefficiency results in a saving potential of approx. 30% within the sector and taking into consideration the high contribution to national primary energy, RECP measures can have a huge impact.

There are a certain number of sector-specific regulatory policies and voluntary strategies like 3R Strategy (2010), but there are no policies relevant to promote **Cleaner Production, Resource Efficiency and/or Energy Efficiency**.

Energy Efficiency and Conservation Master Plan (EECMP) of SREDA: Under the action-plan of the EECMP, three EE&C programs will be promoted, namely, Energy Management Program, EE Labelling Program and EE Buildings Program.

Financial incentives such as low-interest loans, subsidies and preferential taxes will be provided to lessen the initial costs of end users who purchase high energy efficient appliances and industrial equipment.

With regard to the implementation of RECP and EE&C policies, the government pursues the goal of a self-reliant RECP/EE&C society by 2030, through various incentive mechanisms and regulatory.

MPEMR stands for a kind of orchestrator and organizes the multi-sectoral cooperation of different parties and stakeholders. The **SREDA** is the main Implementing body to promote nationwide EE&C activities and has monitoring functions. While **Local Governments** take responsibility to administrate the new version of Bangladesh **National Building Code (BNBC)** and **Green Building Guideline (GBG)** as well as RECP activities in office, projects and own procurement.

As part of the Action Plan in EE&C the Energy Management Program targets large industrial energy consumers including metal SMEs in the building and construction sector with activities such as qualification and examination system for Energy Managers and Auditors Benchmarking. In addition, there is an EE Building Programme for the Building Sector, which is implemented by the local governments.

Since the establishment of SREDA as a national nodal organization for promoting demand-side energy efficiency and conservation in the countries several programs and projects have been undertaken such as (1) National Building Code, (2) Text Book Curriculum of schools,

madrasas and colleges, (3) Improving Kiln Efficiency in the Brick Manufacturing Industry or (4) Energy audits by Energy Audit Cell und Electrical Advisor and Chief Electrical Inspector.

Problem Analysis

Bangladesh's is one of the fastest growing economies with continuously growth rates of 6-8 percent and one of the most densely populated countries in the world. Many of the Energy Efficiency initiatives previously mentioned have understated challenges such as: environmental performance, political acceptability and feasibility of implementation. Here we have some of these limitations.

The enforcement of the existing regulation lacks of strength and structure. The policies are not correctly adapted to the needs of the regulatory institutions. SMEs are an important part of the economy but they always have to struggle with the missing middle, they are either too small or too big to get involved in any framework. The inadequate communication channels among the political institutions do not exert any pressure among the top management entities to turn into RECP strategies.

There are no incentives from the regulatory institutions to promote the RECP. There are no tax reductions or subsidies over clean technology. SME by themselves have a small financial capability and struggle with old machinery and energy inefficiency. The lack of government support over technology or clean energy access is an obstacle.

There is a lack of knowledge regarding the RECP in the regulatory institutions. There is a low technical capacity and no experts over

energy efficiency methods in the SMEs and the lack of awareness campaigns and awareness programs creates a knowledge barrier towards RECP. The lack of correct labelling, product familiarity and distribution networks that are informed over the RECP technology creates difficulties in the SME production chains.

There is a lack of coordination among government institutions on the implementation of the policies. There is the National Environmental Policy, the Industrial Policy and the National Energy policy, and there is action to initiate the RECP procedures. SME's depend many times not only in the public financial institutions but on banks, private stakeholders, NGOs and civil society; the lack of communication among all of them means a repetitive informational campaign from their side, resulting in inefficient procedures.

The industry owners have no interest in energy efficiency measures. This happens when there is no clear knowledge about all the benefits of taking in their SMEs RECP practices. The industry has not been exposed to any training or education programs promoted by the government. There are limited training facilities and no academic programs over this information.

There is no financial support to the industries that take on this energy efficiency and cleaner production measures. The financial institutions that support RECP type of measures have no base knowledge of RECP in SMEs. The difficult step of applying to a financial support of SME makes even harder to access any type of soft loan, tax or vat reduction.

The tariff of the electricity access and the natural gas price is low due to subsidies implemented as Energy Policies by the Government. This measures lead to an overall increase in the demand and has nudged the government towards buying it from private producers, resulting in an increase in the production energy prices. Due to the increase in the production costs the manufacturing costs are higher and the industries are constantly struggling with the competition from China since their manufacturing costs are lesser, therefore, the product price lower.

Recommendations

Based on this problem analysis METABUILD recommends policymakers to pay attention to some of the next ideas to improve the implementation and compliance of the RECP initiative.

- Create a policy instrument that mixes reward/penalty, motivation and support over the enterprises that decide over the RECP measures, this will facilitate the enforcement of the energy efficiency measures and the awareness of many financial institutions;
- Increase the information exchange among SMEs, stakeholders and financial institutions. Awareness among the main players will create better RECP implementation chances;
- Increasing public funding for RECP initiatives that target SMEs;
- Create regional and international cooperation; this will facilitate the access to technology, finance and technical support to the enterprises which look forward to applying energy efficiency measures.

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POLICY BRIEF

Promoting resource efficient cleaner production (RECP) in metal SMEs in the building and construction sector in Nepal



Background

Nepal is still recovering from the 2015 earthquake but the **metal industry** is booming. In the first six to eight months after the incidence many metal companies were negatively affected by lower demand, a lack of raw materials, fuels and employees. Only some industries like metal sheet producers experienced immediate positive effects through a rising demand for low-cost reconstruction. With restarting the temporarily stopped construction of infrastructure and new investments in reconstruction and in hydropower plants the demand for metals now is rising fast. The iron and steel industry is among the largest sectors in terms of investment in the country and the reconstruction of most government buildings, historical monuments and religious structures still lie ahead.

On the other hand, the metal industry in Nepal faces multiple hindrances. Besides a lack of skilled workforce, metal SMEs have to deal with material shortages caused by insufficient infrastructure and transportation. The main challenge is the ongoing energy crisis that increases the costs of production and often results in a lack of competitiveness in the regional and international market.

In order to overcome these challenges, the **METABUILD project** promotes the adoption of Resource Efficient Cleaner Production (RECP) measures in small and medium-sized enterprises (SMEs) that operate in Nepal's building and construction sector.

Metal SMEs in the building and construction sector include steel rerolling mills, ferrous and non-ferrous foundries as well as producers of black-smithy and light engineering products such as bars, roofing materials, gates, doors, grills, frames etc.

Due to their small size and their limited capacity and resources, SMEs often have low environmental, health and safety standards. In combination with the polluting nature of production processes in the metal sector, this makes metal SMEs a promising target for the implementation of RECP measures.

Resource Efficient Cleaner Production is an approach for companies to increase their productivity and to contribute to social, environmental and economic sustainability. It combines two concepts:

- **Resource Efficiency** means “reducing the total environmental impact of the production and consumption of goods and services, from raw material extraction to final use and disposal” (UNEP n.d.).
- **Cleaner Production (CP)** is a “continuous application of an integrated environmental strategy to processes, products and services to increase efficiency and reduce risks to humans and the environment” (UNEP n.d.).

The benefits of adopting RECP measures are increased productivity and profitability as well as an improved environmental and social performance. This includes reduced emissions and waste generation as well as safer and healthier working conditions.

By taking up RECP measures, SMEs are enabled to cope with limitations in existing infrastructure (e.g. power and material supply) and to use scarce resources more efficiently. In Nepal, especially energy efficiency is widely recognized as the “low-hanging fruit” for achieving energy security. RECP measures will increase SME’s national, regional and global competitiveness as well as help them gain new customers that look for sustainable products and services.

Nepal’s government has recognised these benefits of “greening” the country’s industry and considered them in several policies and programmes. However, a large potential regarding the promotion of RECP in Nepal’s metal SMEs remains untapped.

In this **policy brief**, the METABUILD team, therefore, sketches the current status of Nepal’s RECP policy and regulation, presents a problem analysis and provides recommendations for strengthening RECP among metal SMEs in Nepal’s building and construction sector. The policy brief is based on desk research and inputs from the Society for Environmental & Economic Development Nepal.

Current status of RECP regulation

In its report ‘Sustainable Development Goals Status and Roadmap: 2016-2030’, the **Nepalese Planning Commission** names clean energy as one of three sectors that help Nepal move towards a job-creating and low-carbon economy.

While RECP strategies and measures are not as prominent as general environmental or energy issues, there are many policies and programmes that contributed to more efficient and eco-friendly production.

The NPC stated at first the five-year and the three-year plan based on government’s focus in macroeconomic and social development addressing sustainable development, human rights and good governance. However, sustainability is linked to living standards and not environmental measures which show needs more efforts and resources as a project.

In 1997, Nepal issued an **Environmental Protection Act** that mandates different types of enterprises based on their size and nature to conduct mandatory Initial Environment Examination (IEE) or Environment Impact Assessments (EIA).

Energy efficiency was named as an important field of intervention in several reports. The most important ones were the National Electricity Crisis Mitigation Action Plan 2008, the National Adaptation Programme of Action 2010, the National Climate Change Policy 2011, the Three Year Plan 2010-2013 and the Action Plan on National Energy Crisis Prevention and Electricity Development Decade 2016.

Cleaner production practice in enterprises was first introduced by **UNIDO** from 1993 to 1998 in five industrial sectors: textiles, sugar, carpets, vegetable oil and ghee, and the metal industry. Subsequently, the **Environment Sector Programme Support (ESPS)** promoted cleaner production as a proactive waste management tool in over 360 industries (66 percent small, 21 percent medium and 13 percent large). High energy saving potentials were identified in these industries and in terms of electricity, fuel and greenhouse gas emissions, roughly one-third of these potentials was achieved throughout the programme. The ESPS was a bilateral programme between the Government of Nepal and the Government

of Denmark (DANIDA) from 1999 to 2008. For the first time, the programme introduced the concept of environmental management systems to Nepal to improve the environmental performance of industries. It promoted a preventative approach to minimise waste generation and to optimise the use of resources.

On a policy level, the **10th Five Year Plan (2002-07)** recommended the promotion of cleaner production in Nepali industries. The government's high motivation to improve **RECP** was also made clear by the **Industrial Policy** from 2011. One of the five main objectives of the policy paper is to establish industrial entrepreneurship as a sustainable and reliable sector by using the latest technology and promoting environment-friendly production processes. There are two concrete policies to achieve that goal: (i) giving technical and financial assistance to companies willing to invest in environment-friendly and energy saving technology and (ii) taking special measures for promoting pollution control and carbon neutral industries.

In 2008 the Government of Nepal and the Government of Germany agreed to promote the more efficient use of energy through the creation of the **Nepal Energy Efficiency Programme (NEEP)**. The programme was jointly implemented by the Water and Energy Commission Secretariat (WECS) and the German Agency for International Cooperation (GIZ). The first phase of four years concentrated on the promotion of energy efficiency in households and the industrial sector. After completing it in 2014, it continued its work in a second phase from 2014 to 2017. This second phase (i) assisted with the introduction of market-based energy efficiency services for the private and public sector,

(ii) backed improved cooking stoves for rural households and (iii) provided direct advice and expertise to the government for the establishment of policy and institutional framework to foster energy efficiency in the country.

In response to NEEP, a private sector initiative established the Energy Efficiency Centre (EEC) in 2009 under the umbrella of the Federation of Nepalese Chambers of Commerce and Industry (FNCCI). EEC is a networking and capacity building platform and the implementing partner of one of the NEEP's components energy efficiency in industries.

This component comprises several concrete activities: First, NEEP qualifies energy auditors for the industry and conducts pilot energy audits. Secondly, NEEP supports cooperation and networking with other regional institutions regarding services for the industries and technology providers. Thirdly, NEEP provides information to banks to enable them to offer financial services to the industries for investments in energy efficient technologies.

In a baseline study, NEEP identified eight industrial sectors with high potentials for improvement in energy efficiency. One of these was the metal industry.

On a policy level, the Ministry of Energy included technical audits of large electricity consumers for the effective management of electricity in its 2016 **Action Plan on National Energy Crisis Prevention and Electricity Development Decade**.

There are try-outs of sustainable development and few industries are

acquiring environmental labelling's and environmental management systems realising their environmental responsibilities but the adoption of the measures is not integrated into the industries network.

Hitherto, there is, however, **no specific policy addressing RECP**. NEEP expects an Energy Efficiency Strategy to be in place within the next two years. The programme is meant to support the implementation, monitoring and evaluation of the strategy once it is adopted. Also, Nepal is in the process of writing a new constitution which provides opportunities to envisage a nation that is more sustainable, responsible, and environmentally conscious.

This list of RECP policy instruments and programmes shows that the Nepalese government has ambitions with respect to greening the economy. There is, however, room for improvement. While there are various national and sectoral approaches addressing RECP issues, there is no comprehensive national RECP strategy and no explicit initiative targeting metal SMEs in the building and construction sector.

Problem Analysis

The Nepalese government has shown ambitions towards "greening" the process of economic recovery in order to achieve sustainable economic growth. This is a clear signal that the introduction of RECP measures at the industry level is a timely initiative. In practice, however, challenges regarding the implementation of RECP in metal SMEs remain, including policy and legislative obstacles, SMEs' capacity constraints, SMEs' difficulties in accessing green finance and general awareness issues.

Policy issues

While policies in Nepal increasingly focus on environmental issues there is **no explicit RECP strategy**.

As mentioned above, the need for energy efficiency was recognized by many strategy papers. These also outlined specific action and policy measures ranging from periodic energy auditing and reporting over public awareness and sensitization, development of standards, certification and labelling and energy efficiency codes to technical and financial incentives. The absence of a national energy efficiency or RECP strategy, however, prevents the government from effectively implementing the proposed actions. Only a comprehensive strategy tackling existing institutional, informational, technical, financial, and market barriers all at once can significantly improve RECP in Nepal's industry.

Also, the formulation of such a policy would ensure that the government builds an RECP framework that is sustainable and incorporated into Nepalese law. Hitherto, many efforts regarding RECP issues only have been made in cooperation with developing agencies of donor countries. There were few initiatives regarding RECP in industries that came from Nepal's government itself.

Another challenge relates to **policy content**: while there are many initiatives and schemes for promoting cleaner production and energy efficiency they focus mainly on households, hydroelectricity, alternative energy and industry in general. Metal SMEs have not yet been identified as an explicit and promising target group. Hence, there is

a need for specific support schemes for metal SMEs in Nepal's building and construction sector that take into account the technical and financial capacity constraints as well as the specific needs of these SMEs.

SMEs' technical capacity constraints

Small and medium-sized enterprises do not only differ from large enterprises in their number of employees and their financial turnover, but also regarding their expertise and their technical capacity. First, SMEs often lack the management skills and knowledge to integrate sustainability approaches like RECP in their daily business. Secondly, the sector lacks awareness of available technical solutions and their potential benefits. Thirdly, SMEs often lack the technical capacities to procure, install and operate new technologies. These technical constraints are typically partnered with a high level of uncertainty about

how RECP technologies might work in their respective settings. Thus, the overall challenge regarding SMEs' technical capacity constraints is the limited availability of skilled workforce, both at managerial and at the operational level, that can provide knowledge on the introduction of RECP technologies and on the operation of respective technical facilities.

Access to green finance

Besides technical capacity constraints, SMEs also face limited access to green finance as a major obstacle for RECP uptake. This is due to barriers on the SME as well as on the banking side.

SMEs, on the one hand, generally have difficulties in accessing external finance from lending institutions due to high

interests and required collaterals. Also, SMEs' management often has insufficient knowledge and skills to access potentially available external finance for RECP investments; they have, for instance, constrained knowledge of funding options.

Lending institutions, on the other hand, are often reluctant to lend to SMEs in general and to green businesses in particular. Reasons for this reluctance include the banks' ignorance of SMEs' financing needs as well as the presumably higher risks related to small-scale green investments.

Awareness and motivation issues

Despite the implemented programmes described above, the **private sector** remains largely unaware of both the necessity of addressing environmental concerns and of the possible benefits. There is a widespread misconception that energy efficiency might slow economic growth which makes companies deal with energy savings only after ensuring economic growth. Instead of adopting proactive options such as energy efficiency, resource optimisation and cleaner production, they pursue a rather reactive approach to environmental management. However, many examples prove that it makes good business sense to improve resource productivity and reduce pollution intensity.

However, experiences made in existing programmes confirm the low willingness of companies to concentrate efforts or capital on environmental concerns. Most options that were implemented were low- and no-cost options. The achieved third in identified energy saving potentials within the ESPS programme, for instance, mainly comprised interventions like the use of energy saving lamps, translucent sheets or

self-closing water hoses. Companies were reluctant to implement options demanding high investment.

Thanks to the high position of environmental issues on the political agenda and existing programmes the awareness about the merits of energy efficiency is growing. It remains however on a low level. Consequently, Nepal is still far from realizing its significant energy efficiency potential.

Recommendations

Based on this problem analysis, the METABUILD team suggests to national policymakers to take up the following points to promote resource efficient cleaner production (RECP) in metal SMEs in Nepal's building and construction sector:

- Promoting the building and construction sector as a priority area for upcoming RECP activities and policies in the steering committee;
- Raising awareness for SMEs' RECP challenges among policy stakeholders in order to highlight the need for tailor-made policy formulation and implementation;
- Re-tailoring existing RECP initiatives to particularly address SMEs;
- Raising awareness for SMEs' financial needs among lending institutions;
- Aligning green investment programmes with SMEs' financing needs;
- Providing incentives to encourage innovations in SMEs for ensuring RECP measures;
- Increasing public funding for RECP initiatives that target SMEs;
- Supporting green procurement by the public and private sectors to encourage implementation of RECP in the SMEs ;

- Raising awareness for RECP issues among the society through dissemination and education campaigns.

The METABUILD project seeks to promote actions in these areas and is willing to support any initiative aimed at addressing these issues.

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POLICY BRIEF

Promoting resource efficient cleaner production (RECP) in metal SMEs in the building and construction sector in Sri Lanka



Sri Lanka

Background

Sri Lanka's **building and construction sector** is booming. The sector consumes large amounts of metals such as steel, iron, aluminium and copper, and is therefore highly dependent on the metal industry. The metal industry in Sri Lanka faces increasing pressure on energy, material and water resources as they are becoming scarcer and thus more expensive. One of the key challenges that the industry faces are high costs of production due to increasing prices of the above resources. This often results in a lack of competitiveness in the regional and international market.

In order to overcome this challenge, the **METABUILD project** promotes the adoption of Resource Efficient Cleaner Production measures in small and medium-sized enterprises (SMEs) operating in Sri Lanka's building and construction sector.

SMEs play a crucial role in Sri Lanka's economic development: More than 75% of all businesses in Sri Lanka are SMEs, accounting for 52% of the country's gross domestic product (GDP) in 2017. Moreover, more than one third of Sri Lanka's working population is employed in the SME sector, including skilled, semi-skilled and unskilled workers.

Metal SMEs in the building and construction sector include steel rerolling mills, ferrous and non-ferrous foundries as well as producers of black smithy and light engineering products such as bars, roofing materials, gates, doors, grills, frames etc.

Due to their small size and their limited capacity and resources, SMEs often have low environmental, health and safety standards. In combination with the polluting nature of production processes in the metal sector, this makes metal SMEs a promising target for the implementation of Resource Efficient Cleaner Production (RECP) measures.

RECP is an approach for business entities to increase their productivity and to contribute to social, environmental and economic sustainability. It combines two concepts:

- **Resource Efficiency (RE)** means "reducing the total environmental impact of the production and consumption of goods and services, from raw material extraction to final use and disposal" (UNEP n.d.).
- **Cleaner Production (CP)** is a "continuous application of an integrated environmental strategy to processes, products and services to increase efficiency and reduce risks to humans and the environment" (UNEP n.d.).

The **benefits** of adopting RECP measures are improved environmental and social performance while simultaneously increasing productivity and profitability. This includes reduced emissions and waste generation as well as safer and healthier working conditions. By taking up RECP measures, SMEs are enabled to cope with limitations in existing infrastructure (e.g. power and water supply) and to use scarce resources more efficiently. This will increase their national, regional and global competitiveness and also help them gain

new customers who are looking for sustainable products and services. Sri Lanka's government has largely recognised these benefits of "greening" the country's industry and launched many initiatives and schemes for promoting RECP.

In this policy brief, the METABUILD team therefore sketches the current status of Sri Lanka's RECP policy and regulation, presents a problem analysis and provides recommendations for strengthening RECP among metal SMEs in Sri Lanka's building and construction sector. The policy brief is based on desk research and inputs from Sri Lanka's National Cleaner Production Centre (NCPC).

Current Status of RECP Regulation

Environmental policy ranks very high on Sri Lanka's political agenda, with the country's President also leading the Ministry which handles the subject of environment i.e. the **Ministry of Mahaweli Development and Environment (MMDE)**.

The notion of environmental protection has a long history in Sri Lanka. A stone inscription set up by King Devanampiyathissa in 236 BC which refers to the protection of flora and fauna and certain areas of the land as sanctuaries can be found on Mihinthale Mountain that situates in Anuradhapura, then the capital of the country. It is considered to be the first written environmental policy in the world.

In modern times, the first **national environmental act** (NEA No 47) was issued in 1980. It was amended twice in 1988 (No. 56 of 1988) and 2000 (No. 53 of 2000) and instituted standards to control noise, waste water and air pollution generated by

industries. In June 2019, the National Environmental (Stationary Sources Emission Control) Regulation, No. 01 of 2019 has been cited.

While the Ministry of Environment is executing the environmental policy in the country, the **Central Environmental Authority (CEA)** has been set up under the National Environmental Act No. 47 (1980) as a fully empowered agency to develop and implement legislations related to pollution prevention.

In this role, the CEA issues two type of licenses called Environment Protection Licences and Scheduled Waste Management Licences, both targeting environmental pollution control generated through industries. The Scheduled waste management licences include regulations on hazardous wastes (called "scheduled wastes" in Sri Lanka), particularly regarding the storage, transportation, handling, usage and disposal of hazardous wastes by industrial organisations.

Representing another central pillar of the policy framework of Sri Lanka is the **Sustainable Development Act**, enforced in 2017 as a holistic legal framework to ensure that the National Policy and Strategy on Sustainable Development is prepared in accordance with the provisions of the Act and comprehensively implement the National Policy and Strategy on Sustainable Development on a national level. Under this framework, the **Sustainable Development Council** has been put into place with the task to facilitate the achievement of national, regional and international commitments relating to Sustainable Development and monitor and synchronise all sustainability related policies of the

different ministries and government agencies. Specifically addressing the issue of RECP, the Ministry of Environment jointly with the country's National Cleaner Production Centre (NCPC) developed a **National Cleaner Production Policy and Strategy (NCPPS)** in 2005 [4]. This policy marks a paradigm shift in mainstreaming Cleaner Production (CP) in Sri Lanka as it envisages the incorporation of CP concepts and practices in all sectors. While the NCPPS serves as an umbrella policy on cleaner production, **sectoral cleaner production policies and strategies** were subsequently developed.

This strengthened the sector-wise implementation of CP concepts. Here, the main responsibility lies with the **National Steering Committee on Cleaner Production Policy and Strategy**. The committee is led by the Ministry of Environment and also includes representatives of other ministries and government agencies. Apart from implementation activities, the committee is also in charge of extending CP policies to other sectors. Until today, such sectoral CP strategies have been developed for the health sector (2007), the tourism sector (2008), the fisheries sector (2008) and the agriculture sector (2012).

In addition to CP policies, Sri Lanka has issued a **National Solid Waste Management Policy** (2008) that explicitly aimed at maximising resource recovery and minimising waste disposal. This policy is currently being revised and will be supplemented by the **"National Waste Management Policy"** [5]. As of now, the responsibility for solid waste management lies mainly with local government agencies, often supported by central government agencies through funding and capacity development. A five-year Action Plan

initiated by the Western Province Waste Management Authority set the goal to increase the recycling rate up to 38% by 2020 from 17% in 2015. Under the National Waste Management Policy, the MMDE has decided to include a national policy on Chemical Management Policy in order to improve the chemical waste management at the industrial level.

In 2009, the Sri Lankan government launched the **Haritha Lanka Programme**, a 7-year national action plan targeting ten key areas for greening the country. Under this programme the **promotion of a more sustainable building and construction sector** gained new momentum, e.g. through the **"Green Rating System" for sustainable buildings** [1]. The objective of this voluntary scheme was to increase efficiency of energy, water and materials used in the construction sector. The measures promoted under the scheme are in line with the RECP approach; they include heat control, use of natural light and breeze, rain water harvesting etc. – both for existing and new buildings. Another initiative put forward under the Haritha Lanka Programme is the establishment of the **National Council for Sustainable Development (NCSD)**, chaired by the president himself and facilitated by the Ministry for Environment. The council functions as a platform to strengthen policy integration and implementation of the Haritha Lanka programme. After the conclusion of the seven years period of the Haritha Lanka programme, a follow-up action plan had not yet been published at the time of this report.

The **project on Sustainable Consumption and Production (SCP) policy support component**, supported by the EU-SWITCH Asia programme, is another milestone in this

arena. The project was implemented under the MMDE between 2015 and 2018. The project's overall objective was to develop an overarching **national SCP policy for Sri Lanka**, which was drafted under the Ministry's leadership and got approved by the parliament in November this year. Before developing the new SCP policy draft, a total of 46 existing SCP-related policies were reviewed. During this review process, the gaps and inconsistencies of the existing policies were identified. These findings had been communicated to the relevant policy developers for their consideration.

In 2016 RECP was further promoted through the initiation of the **National Programme on Energy Demand Management, Efficient Energy Use and Energy Conservation**. Until 2021 a presidential taskforce will be drafting various recommendations for decreasing electricity consumption by over 20%.

In June 2018, the National Agency for Public Private Partnerships together with the Ministry of Finance in its **Environmental Assessment and Management Framework** [2] for Public Private Partnerships (PPP) published a guideline (Annex 8 of the framework) on mitigating negative impacts of construction projects, including specific notes on the sourcing of construction materials, transport and storage of soil, as well as water and noise pollution and construction waste management.

In early 2019, the NCPC together with the MMDE started the planning phase to implement a four-year project on **"Global Best Practices on Emerging Chemical Policy issues of Concern under Strategic Approach to International Chemicals Management (SAICM)"** [6], which will be implemented by NCPCs in eight different countries. The

project's overall goal is to improve the **management of hazardous chemicals throughout their life cycle to minimize negative environmental and health impacts**. Nationally, the project will support the MMDE by **piloting the recently designed Green Public Procurement Policy in the Construction sector**. One of the key implementing partners of this project will be the **Green Building Council of Sri Lanka (GBCSL)** that will incorporate the policy into its Green Building Certification Scheme.

This list of RECP policy instruments and initiatives shows that the Sri Lankan government is highly ambitious with respect to greening the national economy. However, while there are various national and sectoral approaches addressing RECP issues, there is no explicit initiative targeting metal SMEs operating in the building and construction sector.

Problem Analysis

Sri Lanka's economy, including its SME sector, is still in the process of recovering from the unrests of 30 years (1979-2009) of civil war. The Sri Lankan government, however, has shown high ambitions towards "greening" the process of economic recovery in order to achieve sustainable economic growth. This is a clear signal that the introduction of RECP measures at industry level is welcome. In practice, however, challenges regarding the implementation of RECP in metal SMEs remain, including policy and legislative obstacles, SMEs' capacity constraints, SMEs' difficulties in accessing green finance and general awareness issues.

Policy issues

One of the main challenges at policy level is **implementation**. In 1980, the CEA was

established to provide for an institutionalised mechanism for enforcement of environmental regulations. Nonetheless, implementation of environmental policies has been inconsistent due to the civil war and related economic and political instability. Limited financial resources in government and administrative institutions, unfavourable fiscal policy decisions and a lack of political will are other barriers to effective policy implementation.

Although there are many initiatives and schemes for promoting cleaner production and energy efficiency in the building and construction sector, metal SMEs have not yet been identified as an explicit and promising target group. Hence, there is a need for specific support schemes for metal SMEs in Sri Lanka's building and construction sector, which should take into account the technical and financial capacity constraints of SMEs.

In its **Voluntary National Review on the Status of Implementing Sustainable Development Goals in 2018** [3], the Sri Lankan government already acknowledged the issue that national RECP policies tend to come in the form of suasive initiatives instead of mandatory regulations. This poses the risk of slow policy adoption and reduced positive impacts due to the dependence on stakeholders' RECP awareness and their technical and organisational capability.

SMEs' technical capacity constraints

Small and medium-sized enterprises do not only differ from large enterprises in their number of employees and their financial turnover, but also regarding their expertise and their technical capacity. Firstly, SMEs

often lack the management skills and knowledge to integrate sustainability approaches like RECP in their daily business. Secondly, the sector lacks awareness of available technical solutions and their potential benefits. Thirdly, SMEs often lack the technical capacities to procure, install and operate new technologies. These technical constraints are typically partnered with a high level of uncertainty about how RECP technologies might work in their respective settings. Thus, the overall challenge regarding SMEs' technical capacity constraints is the limited availability of skilled workforce, both at the managerial and at the operational level, that could provide knowledge on the introduction of RECP technologies and on the operation of respective technical facilities.

Access to green finance

Besides technical capacity constraints, SMEs also face limited access to green finance, which represents a major obstacle for RECP uptake. This is due to barriers on the SME as well as on the banking side [7].

SMEs, on the one hand, generally have difficulties in accessing external finance from lending institutions due to high interest rates and required collaterals. Also, SMEs' management staff often has insufficient knowledge and skills to access potentially available external finance for RECP investments; they are, for instance, unaware of how to submit bankable investment proposals.

Financial institutions, on the other hand, are often reluctant to lend to SMEs in general and to green businesses in particular. Reasons for this reluctance include the banks' ignorance of SMEs' financing needs as well as the presumably higher risks related to small-scale green investments.

Therefore, there are hardly any financial products available that explicitly target SMEs' small-scale RECP investments. Instead, most financial products offered by banks target investments at a larger scale and are therefore unsuitable for SMEs.

An exception to this general lack of awareness of SMEs' financing needs is **DFCC Banks'** lending policy. The bank has been providing financial support to Sri Lanka's SME sector for more than 50 years, focussing on energy efficiency and renewable energy projects. So far, however, green financing does not contribute significantly to greening Sri Lanka's SME sector.

Awareness and motivation issues

Limited awareness for the necessity of greening the industry in general, and the metal SMEs in particular remains a challenge at all levels. While cleaner production is becoming an increasingly prominent issue in Sri Lanka's political sphere, there is a tendency among the industry and consumers to neglect the topic at the micro-level.

In terms of policies, various actions to promote awareness for RECP have been taken over the past twelve years. In 2007, the National Cleaner Production Centre launched the **National Cleaner Production Awards Programme** as the first environmental awards programme in Sri Lanka, which covers the SME sector as a special category to promote and recognise those enterprises that are implementing RECP measures. Similarly, the CEA launched the Presidential Awards for Environment – also called National Green Awards – that cover a wide spectrum of industrial and service organisations.

In January 2016, Sri Lanka's President formally launched the awareness campaign **"Sri Lanka NEXT: A Blue – Green Era"**. One of the main objectives of this campaign is to promote more environmentally friendly industrial production and to contribute to raising awareness for RECP in the building and construction sector and in metal SMEs in particular. However, many SMEs still lack information about RECP issues. This remains a significant barrier for RECP promotion among Sri Lanka's SME sector.

Recommendations

After analysing the above issues, the METABUILD team suggests to national policymakers to take up the following points to promote RECP in metal SMEs in Sri Lanka's building and construction sector:

- Promoting the building and construction sector as a priority area for upcoming RECP activities and policies;
- Highlight the need for tailor-made policy formulation and implementation;
- Re-tailoring existing RECP initiatives to particularly address SMEs;
- Raising awareness for SMEs' financial needs among financing institutions;
- Aligning green investment programmes with SMEs' financing needs;
- Increasing public funding for RECP initiatives targeting SMEs;
- Raising societal awareness for RECP through dissemination and education campaigns.

The METABUILD project seeks to promote actions in these areas and is willing to support any initiative addressing the above-mentioned issues.

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Report on Regional Policy Dialogue

Prototyping Policy Solutions for Resource-Efficient Cleaner Production (RECP) in South Asia

Policy Solution Prototypes to boost RECP in Bangladesh, Nepal & Sri Lanka		
	Challenge	Solution Prototype
	Missing monitoring schemes of RECP in SMEs	Promoting RECP energy audits amongst SMEs
	Lack of standardisation on RECP	Uniform standards for RECP in the SMEs
	No specific RECP policy in place	RECP policy framework and incorporation of its elements in sectoral policies
	Lack of awareness for RECP amongst industries, government bodies and the public	RECP awareness campaigns through trainings, conferences, forums and multimedia
	Insufficient motivation at SMEs to implement RECP measures	<p>Making RECP assessments and implementations compulsory for SMEs</p> <p>Introducing an RECP rating system for high polluting industries</p>

METABUILD Policy Dialogue Event

The METABUILD Policy Dialogue was held in New Delhi, India between 27 and 29 November 2019 and was part of the policy advocacy activities embedded in the METABUILD project. At this event, policy experts and decision makers from Bangladesh, Nepal and Sri Lanka were invited to engage in discussions on how to optimise RECP policies together with a delegation of experts from India.

The aim was to derive prototypes for RECP policy solutions addressing prevalent challenges in the project countries. Before engaging in group-discussions, participants were briefed on the status quo of the RECP & SCP policy landscapes in each of the countries.

The briefings were followed by the presentation of best practices of policy conceptualisation and enforcement from

India. Based on a collection and discussion of the prevalent challenges in each of the project countries, the plenum then voted on those challenges which they deemed particularly pressing and where they saw the potential for effective policy solutions.

Small groups of four to five people from each country formed to develop prototypes for policy solutions to tackle the selected challenges and to increase the overall effectivity and efficiency of RECP policies in the respective country context.

The Structure of this Report

The structure of this report follows the programme of the METABUILD Policy Dialogue. First, some of the key challenges for RECP policymaking in South Asia will be described. A presentation of some best practices for RECP policies from India will be followed by a focus on the three project countries.

After a general description of the specific RECP policy situation in the respective country, the report will lay out the two prototypes that have been conceptualised in small groups for the specific country context during the Policy Dialogue.

Challenges in RECP Policy in South Asia

Economic upswing and increasing populations in South Asia have led to significant growth in the construction and manufacturing sector.

In South Asia, small and medium industries comprise a significant portion of the economy, especially in the manufacturing and construction sector. In Nepal, such

industries constitute about 80% of industrial employment, 70% of the total national export, and around 25% of the country's GDP (UNCRD 2018).

Likewise, in Sri Lanka, they are considered the backbone of the economy, contributing 52% of the GDP and 45% of employment (MIC 2018). In Bangladesh, small and growing industries account for 45% of value addition in the manufacturing sector, 80% of industrial employment, and 75-80% of export earnings (Government of Bangladesh 2017).

Despite their prominent role for the economic development of their countries, many small and growing SMEs lack relevant financial and technical capacities, necessary to conceptualise, finance and implement measures to increase their resource efficiency.

These deficits lead to resource-inefficient production, especially in terms of water and energy usage. Beyond that, missing opportunities to cut production costs through increased resource efficiency also jeopardises industries' competitiveness in local and international markets. This dynamic makes small and medium industries a key target group for implementing RECP measures in the metal finishing sector.

Structural key challenges regarding RECP policy in Bangladesh, Nepal and Sri Lanka:

Lack of awareness for RECP amongst SMEs: SMEs are not aware of the importance of RECP and the business opportunities arising from it due to insufficient visibility of successful RECP measures and business cases.

Capacity constraints for RECP implementation within the sector: Key players in the manufacturing and construction sector lack technical support and experience in implementing measures to increase resource and energy efficiency.

Insufficient access to RECP finance: SMEs lack access to customised financial products, such as soft loans or other lines of credit to invest in RECP measures. Financial incentives like subsidies or tax deductions for RECP are either insufficient or not promoted effectively enough.

Lack of policy tools, strategies and implementation mechanisms: A holistic approach to RECP is often jeopardised by a lack of consistent policy frameworks, clear-cut standards for production processes and comprehensive monitoring and enforcing mechanisms.

Lack of awareness and coordination for RECP amongst government bodies: Government officials need more exposure to RECP to increase awareness for the urgency of this challenge and to ensure coordination between different ministries and government agencies for the promotion and consistent development of RECP.

RECP Best Practices from India

Numerous best practices for RECP policies from India were presented to kick-off the discussion around potential policy solutions. Examples of these best practices are:

Co-Certification for Sustainable Products

In 1991, the Bureau of Indian Standard, the governmental standards organisation of India, issued a certification under the label “Eco Mark”. The idea was to increase public awareness for sustainable consumption by awarding and encouraging businesses who adhere to the cradle-to-grave concept in their production chain and to scale up sustainable production on a national level.

The Indian Ministry of Environment and Forests (MoEF) constituted a steering committee and a technical committee, responsible for identifying eligible businesses and for developing and adapting certification criteria. The Bureau of Indian Standards manages the interaction with manufacturers, including product labelling and collection of certification fees.

As one of the key features to ensure transparency and credibility, the conformity with the Eco Mark certification is monitored and approved by an independent third-party organisation. The certification process includes a verification of relevant ISO certifications, inspection and testing of product samples, as well as an assessment of the production sites. Furthermore, the origin and processing of raw materials is tracked and waste management practices are audited. Currently, the Eco Mark Label mostly covers consumer goods from various domains, such as hygiene products, paper, plastics, paints, batteries, electronics, pesticides and leather.

Promotion of Clean Technology and Energy Efficiency

Also in 1991, in the course of the National Programme on Energy Conservation, the National Ministry of Micro, Small and Medium Enterprises (MSME) launched a programme specifically targeting small-scale industries.

A core objective of the programme was to create awareness amongst small and medium industry clusters, especially foundries and steel-roll mills, for the benefits of applying new technologies to increase resource efficiency in the production process. Bottlenecks and gaps for energy conservation and the adoption of sustainable production techniques were identified in order to derive recommendations and finally follow up on their implementation. With the help of independent RECP experts, educational field programmes were established for engineers and supervisors from respective industries, including on-site energy audits.

Alongside this programme, the National Productivity Council, a nodal agency under the World Bank, added a waste minimisation project with similar capacity development measures. Successful participants of both programmes were then selected as facilitators for further so-called Waste Minimisation Circles (WMCs). These capacity development formats themselves have also reached other industries beyond the metal sector and are currently in different stages of development. Independent consultants continuously monitor the progress of these WMCs.

Another facet, adding to the comprehensiveness of the resource and energy efficiency efforts by Indian.

policymakers, is the Ministry of Non-Conventional Energy Sources (MNEC), which is promoting alternative and renewable energy usage in Indian industries.

NREA – Mainstreaming RECP Policy Efforts Nationally

With the overall goal to reshape the approach to resource usage on a national level, the Indian government with the support from TERI is currently establishing a National Resource Efficiency Authority (NREA). The main task of this institution will be to orchestrate all the different government initiatives around RECP. Apart from a working group of technical and administrative experts under the direction of a deputy director, the NREA will consist of a member group composed of ministry and state government officials, 25 government agencies and industry experts.

The NREA will drive forward various measures to comprehensively foster RECP nationwide, including:

- Mainstreaming holistic RECP approaches across institutions
- Formulating clear resource efficiency targets
- Setting standards and guidelines
- Conceptualising comprehensive action plans to reach resource efficiency targets
- Establishing audit mechanisms and monitoring progress alongside specific RECP indicators
- Providing Capacity Building Trainings

Potential focal sectors of NREA will include construction, steel, aluminium, solar PV, automotive industry and chemicals.

Key Mechanisms for Institutional Engagement

Summarising, the core mechanisms presented as best practice cases from India included:

- Highlighting technology innovation and waste minimisation through lighthouse projects
- Establishing criteria for eco-labels based on corresponding databases
- Increasing visibility of RECP challenges and opportunities through seminars and public events
- Promoting sustainable procurement and retailing amongst industries, as well as the usage of clean energy
- Guidance for RECP financing

Prototypes from Bangladesh

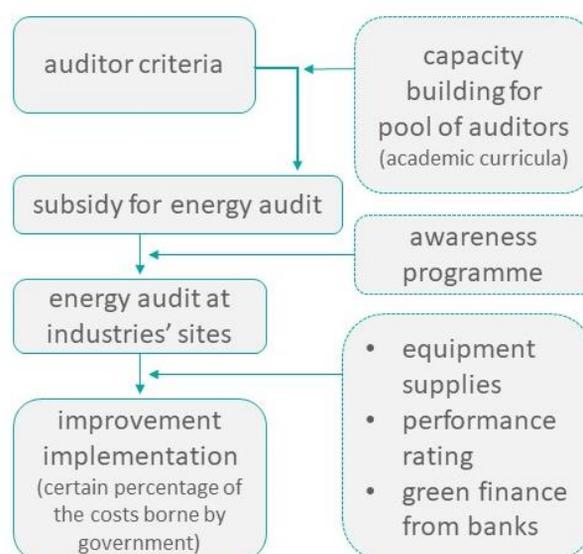


With continuously high GDP growth rates between six and eight percent, with an energy demand expected to triple until 2020 and as the most densely populated territorial state in the world, resource efficiency is of vital importance for Bangladesh's economic and social welfare in the upcoming years.

Apart from relevant ministries, such as the Ministry of Industries, the Ministry of Power, Energy & Mineral Resources and the Ministry of Commerce, it is especially the Sustainable and Renewable Energy Authority (SREDA), who is championing RECP within the country (SREDA 2015).

Prototype 1: Promoting RECP energy audits amongst SMEs

This prototype represents a concept for an incentive scheme for voluntary energy audits in the metal sector in Bangladesh. In the absence of formalised auditing schemes for energy and resource efficiency, the goal is to maximise industry participation in such audits and to incentivise measures for increasing energy efficiency.



Approach:

The approach foresees a capacity development programme for independent energy auditors enhanced through financial subsidies to conduct energy audits on site with SMEs. In order to support participation in the audits, a governmental awareness campaign shall be designed targeting SMEs.

Financing entities would have to be mobilised to provide financing for implementing recommendations for increased energy efficiency, previously derived from the audits. A certain percentage of the costs will be borne by the government.

Government Contributions:

The government's contributions to facilitating the concept will include:

- Providing benchmarks of energy and resource consumption and insights on metal production processes to auditors and industries
- Building auditing capacities of independent auditors
- Providing information and approval for audit subsidies to industries
- Mobilising banks to co-finance energy efficiency measures and providing subsidies
- Validating improvements in energy efficiency and monitoring the audit process

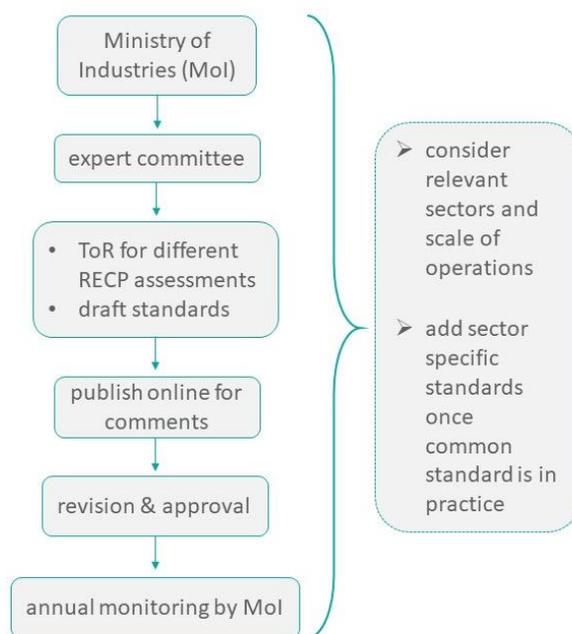
Prototype 2: Uniform standards for RECP in the SMEs

This prototype gives a structural approach to the establishment of uniform standards for resource usage in the metal sector. The aim is to maximise productivity through increased resource efficiency.

Approach:

To implement the prototype, the Bangladesh Ministry of Industries (Mol) would set up an expert committee with the task to create concepts for RECP standards and to formulate ToRs for resource efficiency assessments. These drafts and conceptual documents would then be uploaded to an online platform with the possibility for industries, other government agencies, financial institutions and other stakeholders to suggest adjustments. The drafts would then be refined in a second loop by the Ministry and ultimately established in the form of binding standards

for resource use in metal production processes. The approach foresees the Mol to monitor and revisit the standards on a yearly basis and make adjustments based on lessons learnt from implementation.



Government Contributions:

The role of the Mol will include several responsibilities:

- Selecting RECP experts for the policy drafting expert committee
- Facilitating access for stakeholders to assess and comment on the drafts for RECP standards
- Mobilising other government agencies, industries and financial institutions to engage in the consultation of policy drafts
- Coordinating feedback sessions and evaluating inputs given to refine production standards
- Continuously monitoring and refining production standards after their introduction as formalised policies

Prototypes from Nepal



Although Nepal is still recovering from a devastating earthquake in 2015, the metal industry is on a steady rise as construction and especially reconstruction lead to a rising demand for metal products with many construction projects still lying ahead.

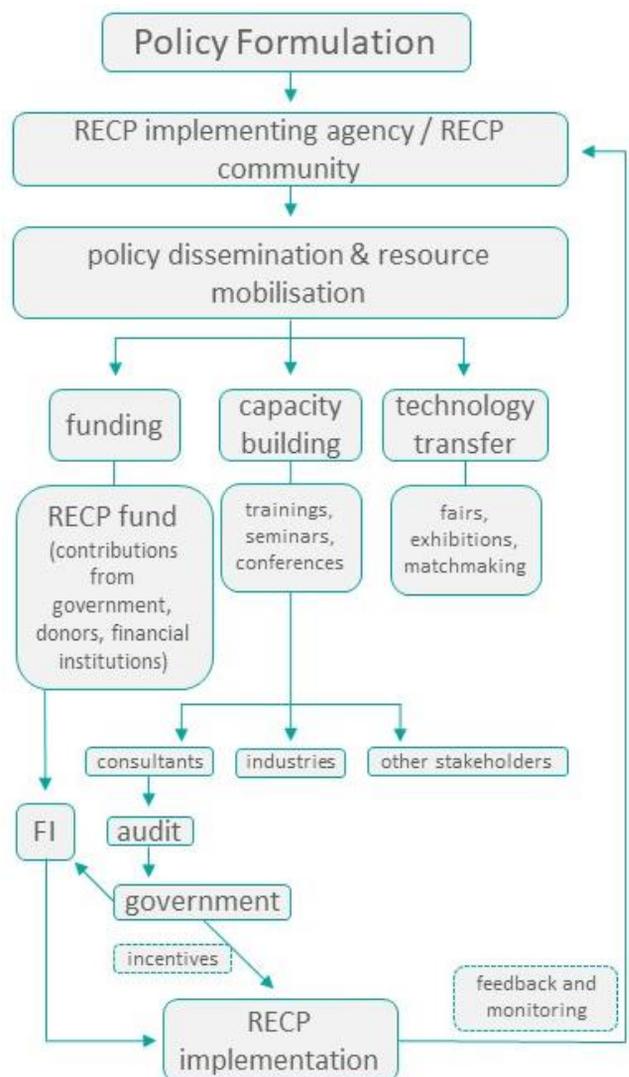
The Ministry of Industry, Commerce and Supplies, the Ministry of Forest and Environment and the Ministry of Labour together with the Nepalese Planning Commission (NPC) represent the most relevant actors in the field of RECP on a national level.

In 1997, the Nepalese government issued an Environmental Protection Act that requires industries depending on size and type of sector to undergo mandatory Initial Environment Examinations (IEE) and Environment Impact Assessments (EIA). In recent years, some policies have been introduced addressing electricity efficiency, such as the National Energy Efficiency Strategy. However, there exists no comprehensive policy framework around RECP (EU 2017).

Despite the efforts around resource efficiency, especially the discussions amongst international donors about green finance in Nepal mainly circle around the topic of access to (renewable) energy, as this remains an issue especially in rural and secluded regions of the country. Accordingly, the World Bank issued two grants with a total of \$7.6m especially to support off-grid renewable energy projects in Nepal (World Bank 2019).

Prototype 1: RECP policy framework and incorporation of its elements in sectoral policies

This prototype seeks to form a concept for a comprehensive RECP policy framework and to subsequently derive specific sectoral sub-policies.



Approach:

The approach to put up such a policy framework rests on three core pillars.

The first one is the creation of a joint fund with contributions from the government, SMEs and international donors. This fund will be the source for financial support for

for local SMEs to undertake energy and resource efficiency audits, bearing up to 80% of the associated costs. Furthermore, the fund shall serve as a source for subsequent loans for implementing RECP measures.

The second pillar is a capacity development framework, where the government provides training and licensing for independent consultants to disseminate best practices and management tools for RECP implementation amongst Nepalese industries and also conduct industry audits.

The final component is a platform for technology transfer, where the government shall promote technology fairs and exhibitions and facilitate matchmaking between different industries for the exchange of best RECP practices within the metal sector. Beyond that, the government would provide financial incentives such as tax benefits for RECP-enhancing equipment or measures to increase workers' health and safety.

Government Contributions:

Key governmental tasks in setting up this framework will be:

- Identifying key stakeholder groups, such as industries, consultants, financial institutions and donors and conducting needs assessments regarding RECP
- Hiring consultants to support the drafting of a policy framework
- Reviewing policy drafts and involving key focus groups
- Finalising policy documents and incorporating them in the legislative process to derive binding RECP policies

- Setting up and administering the fund
- Facilitating technology exchanges, awareness programmes and a capacity development programme for future RECP consultants and auditors

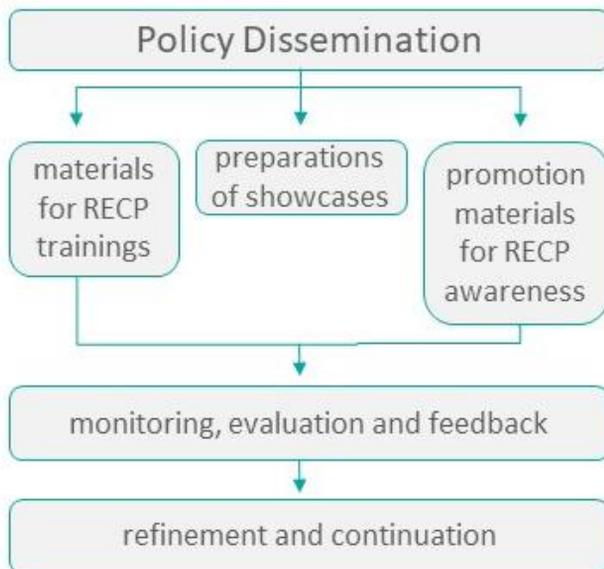
Prototype 2: RECP awareness campaigns through trainings, conferences, forums and multimedia

This prototype tackles the generally low awareness for RECP related matters amongst Nepalese industries, governmental institutions and the general public. The goal is to create a wide acceptance for the problems arising from scarcity of resources, as well as poor resource and waste management.

Approach:

The approach includes the conceptualisation of training materials to conduct RECP awareness trainings for industries and public stakeholders. Alongside these trainings, promotion materials shall be disseminated and showcases of successful RECP measures shall be championed in order to create a reference point for RECP management and to illustrate the environmental, economic and strategic benefits from improved RECP for SMEs.

Each of these prototype components - awareness campaign, trainings, showcases, will be reviewed, further adapted and enhanced based on stakeholder consultations and initial implementation experiences. The idea is to also involve academic institutions, practitioners and a range of government institutions to deliver inputs for the design and refinement of this awareness framework.



Government Contributions:

The government will guide the entire process of setting up this holistic scheme for awareness raising. The government's activities include:

- Creating and disseminating awareness materials
- Conceptualising and coordinating trainings
- Collecting feedback and refining materials and trainings
- Securing sufficient funding

Prototypes from Sri Lanka



With a booming building and construction sector, Sri Lanka's economy shows high demand for metal products and depends significantly on a functioning and sustainable SMEs. With rising resource

prices and the threat of environmental degradation, the country's SMEs are a promising target for the implementation of RECP measures.

Specifically addressing the issue of RECP, the Ministry of Environment jointly with the country's National Cleaner Production Centre (NCPC) developed a National Cleaner Production Policy and Strategy (NCPPS) in 2005 (MoE 2005). This policy marks a paradigm shift in mainstreaming Cleaner Production in Sri Lanka as it envisages the incorporation of clean production concepts and practices in all sectors. While the NCPPS serves as an umbrella policy on cleaner production, sectoral cleaner production policies and strategies were subsequently developed. Here, the main responsibility lies with the National Steering Committee on Cleaner Production Policy and Strategy. The committee is led by the Ministry of Environment and includes representatives of other ministries and government agencies. Until today, sectoral CP strategies exist for the health sector, the tourism sector, the fisheries sector and the agriculture sector.

In addition, Sri Lanka has issued a National Solid Waste Management Policy in 2008 that explicitly aims at maximising resource recovery and minimising waste disposal. This policy is currently being revised and will be supplemented by the "National Waste Management Policy" (MoE 2018). As of now, the responsibility for solid waste management lies mainly with local government agencies.

Moreover, the Ministry of Environment is currently drafting an overarching national policy for sustainable consumption and production (Government of Sri Lanka 2019).

Despite a growing body of policies around RECP, Sri Lanka is still facing some challenges. One of these challenges is prevailing inconsistencies within RECP policies from different government institutions. Another crucial challenge is a need to more rigorously enforce and monitor the policies in place.

Prototype 1: Making RECP assessments and implementations compulsory for SMEs

This prototype seeks to increase the effectiveness of the enforcement of RECP policies through mandatory RECP assessments for industries. This represents an important component for closing the gap between RECP policymaking and impactful RECP measures on the ground.

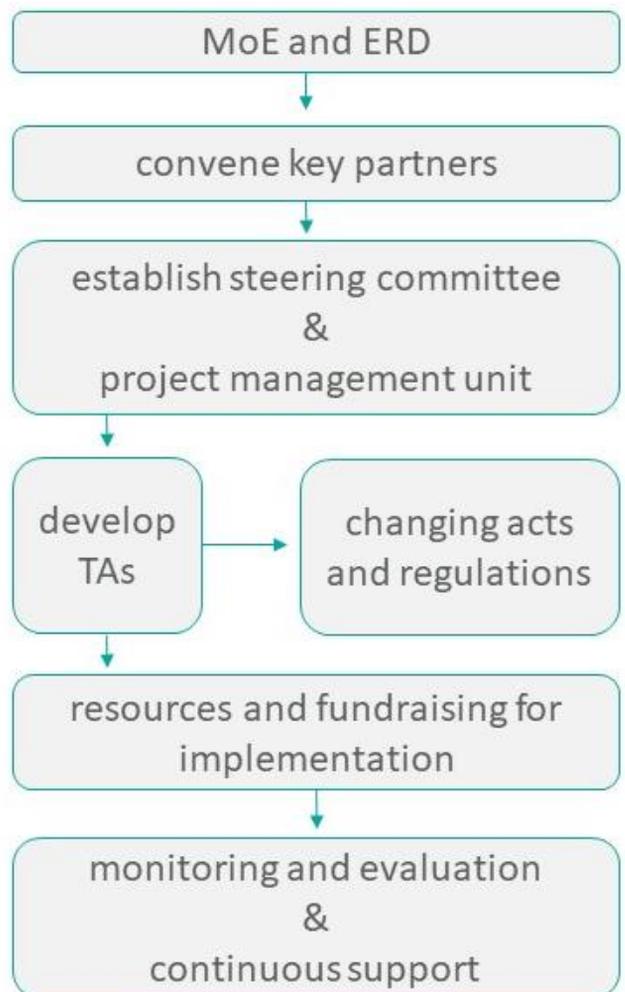
Approach:

To establish a scheme for such RECP assessments, the Department of External Resources (ERD), together with the Ministry of Environment (MoE) would first convey key partners to support the initiative. Such partners should ideally include other ministries, such as the Ministry of Energy and the Ministry of Industry and Commerce, as well as government agencies, especially the Sustainable Development Council (SDC), the NCPC, the Central Environmental Authority (CEA) and the Sri Lanka Sustainable Energy Authority (SLSEA). Subsequently, local authorities across different provinces shall collaborate to implement RECP assessments.

The assessments will result in recommendations for the industries on how to decrease their carbon and material footprint. To incentivize industries to implement these recommendations, the

idea is to make RECP investments tax deductible for industries, to install concessionary interest rates for RECP loans and to certify industries for increased RECP standards.

To jumpstart the initiative, a background paper with a detailed problem analysis and suggestions for the design and implementation of the scheme shall be presented to the cabinet for approval.



Government Contributions:

The MoE shall establish a steering committee and a project management unit to prepare, implement and monitor the assessment framework. Its task will include:

- Drafting policy acts and regulations to render RECP assessments compulsory for industries
- Sourcing funding for the implementation of the scheme and negotiating with different actors such as the national Board of Investment (BOI)
- Establishing training formats for consultants to become licensed RECP auditors
- Promoting the scheme and creating awareness for the new monitoring obligations
- Setting up a thorough reporting scheme to monitor the progress in resource and energy efficiency

Prototype 2: Introducing an RECP rating system for high polluting industries

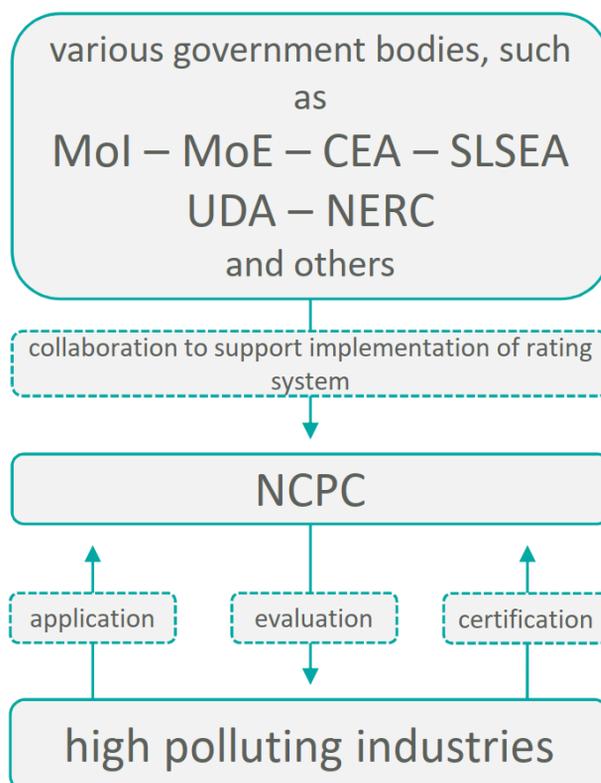
This prototype also addresses the challenge of industries lacking the motivation to engage in RECP. In order to encourage them to adopt the latest innovative practices in their production processes, the idea is to introduce an RECP rating system for SMEs.

Approach:

The NCPC would be the main actor to bring this rating system underway. Further key partners would be the SLSEA and the Urban Development Authority (UDA).

The NCPC would create promotion materials to target high polluting industries and create awareness for the rating system. Industries would then submit applications based on self-assessments. After a sectoral RECP benchmarking by the NCPC, the agency would provide technical support and consulting for industries to adhere to existing RECP industry standards. After this

phase of support, a third external party would then rate the industries. Through subsequent support from the NCPC, the industries will be enabled to continuously improve on RECP in their production processes and to obtain higher ratings in future assessments.



Government Contributions:

As mentioned before, the NCPC will take a major role in facilitating the rating system. This entails:

- Creating awareness for the rating system
- Initiating and steering the application process and rating incoming applications
- Coordinating activities with government bodies, industries and other stakeholders
- Providing one-on-one technical consultancy on RECP based on initial ratings of industries
- Certifying and showcasing industries with outstanding RECP performance

- Endorsing tailor-made bank loans to incentivise industries to improve their level of RECP

Summary

The prototypes developed during the METABUILD Policy Dialogue tackle significant challenges in the realm of RECP policymaking in the project countries Bangladesh, Nepal and Sri Lanka. Moreover, they shine a light on the areas where RECP policymaking should generally draw on. These areas are (1) creating awareness for the issue amongst industries, but also amongst government bodies, (2) securing a thorough implementation and enforcement of already existing policies and standards and (3) providing both, incentives and advisory to help industries overcome the barriers towards increased resource and energy efficiency.

The prototyped policy solutions presented in this report are not exclusively relevant for the METABUILD project countries. On the contrary, these solutions could help to foster RECP across South Asia in general and go beyond the present geographical as well as sectoral context of METABUILD.

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