

POLICY BRIEF

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

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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 SME's 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 and MEs;

- » 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.

References

Eighth Regional 3R Forum in Asia And the Pacific (2018): Country Report Federal Democratic Republic of Nepal

Energy Efficiency Center,
<http://www.eec-fncci.org/>

European Union (2017): Promoting Sustainable Consumption and Production for a Better Future in Nepal

Federation of Nepalese Chambers of Commerce,
<http://www.fncci.org/energy-and-environment-division-134.html>

National Planning Commission (2017): Sustainable Development Goals, Status and Roadmap: 2016-2030,

Nepal Energy Efficiency Programme,
<http://energyefficiency.gov.np/>

Nepal Energy Efficiency Programme / GIZ (2012): Baseline Study of Selected Sector Industries to assess the potentials for more Efficient use of Energy,

Nepal Law Commission (2011): Industrial Policy

Ramchandra Bhusal (2011): SME Finance in Nepal: relevance of bootstrapping finance

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