



# METABUILD Cleantech Finance Report

Overview of Cleantech Finance for Resource-Efficient Cleaner Production (RECP) in South Asia

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## The METABUILD Project

The METABUILD project (2016 – 2020) is one of more than 120 grant projects implemented under the SWITCH-Asia programme, which was launched by the European Commission in 2007 to promote sustainable production processes, services and consumption patterns in Asia.

As a multi-country, multi-partner project, METABUILD has supported over 400 metal product SMEs in the building and construction sector to become more resource-efficient. Apart from direct industry support and awareness building amongst SMEs in the project countries, METABUILD also achieved wider stakeholder engagement through technology fairs, customer roundtables and policy exchanges.

Beyond that, METABUILD engaged in the mobilisation of financial institutions through multiple workshops and subsequent one-on-one sessions on financial product development to enhance cleantech finance in the project countries.

This report gives an overview of METABUILD's understanding of cleantech finance, examines the status quo of cleantech finance in Bangladesh, Nepal and Sri Lanka and assesses country-specific challenges for SMEs in accessing cleantech financial products. The report presents the most pressing challenges prevalent across all three project countries, both from SMEs' point of view as well as from the perspective of financial institutions. It presents core recommendations, which have been derived through the work of METABUILD. Finally, the report explains in detail the METABUILD approach of cleantech financial product prototyping.

## Cleantech Finance

**Cleantech finance**, also often referred to as energy-efficiency (EE) finance, sustainable consumption and production (SCP) finance or RECP finance, plays a

pivotal role to enable SMEs to implement measures to unlock their potential for resource efficiency and cleaner production.

Essentially, the term cleantech finance comprises all financial products, most commonly grants or loans, which equip businesses with the financial resources to implement measures to reduce the amount of primary resources, water and energy used in their production processes. Usually, this requires purchasing specific technologies, restructuring working processes and developing capacities amongst employees. The costs connected to such measures can be substantial and exceed the funds of small and growing industries in particular.

However, there are significant benefits connected to increased resource efficiency and cleaner production:

- reducing production costs through reduced usage of primary materials, energy and water
- reducing business risks (such as the risk of production break due to water scarcity or power outages)
- improving occupational safety and overall working conditions for employees
- gaining new customers who are searching for sustainable and reliable suppliers
- increasing access to (green) finance (e.g. through improved compliance with environmental parameters)

RECP not only has positive environmental and social impacts, but moreover represents a business case for SMEs. By reducing production costs and sharpening their profile as a green company, SMEs can strengthen their position in the national as well as international market and gain a competitive advantage over less sustainable competitors in the sector.



## Cleantech Finance in 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.

Small and growing industries comprise a significant portion of the economy, especially in the manufacturing and construction sector. They account for 45% of value addition in the manufacturing sector, 80% of industrial employment, and 75-80% of export earnings (Bangladesh Government 2017).

From a policy angle, apart from relevant ministries, it is especially the Sustainable and Renewable Energy Authority (SREDA), who is championing RECP within the country, but until now, there are no specific policies to directly promote resource or energy efficiency amongst SMEs (SREDA 2015).

Apart from a lack of a clear policy framework, cleantech finance as such has been on the rise in Bangladesh during recent years, mostly focused on renewable energy and energy efficiency. Some of the most active international donors are the World Bank, the ADB, the Global Environment Facility (GEF) and the German Development Bank (KfW). KfW issued a low-interest loan of €156m to the Bangladesh government in 2019 to strengthen the overall energy efficiency in the country (PV Magazine 2019).

Given that the private sector is generally hesitant to invest in cleantech, the Bangladesh government itself acts as an important financier, most prominently through its two state-owned funds, the **Bangladesh Climate Change Trust Fund (BCCTF)** and the **Bangladesh Climate Change Resilience Fund (BCCRF)** (World Bank 2012). These funds have proven to be the most important national sources of cleantech funding.

Apart from that, some of the more prominent cleantech financing schemes in Bangladesh include:

- **Direct Green Finance Products**, a scheme created by Prime Bank Limited, comprises many different green finance products for SMEs practicing energy efficiency measures and solid waste management.

- **BASIC Bank's Limited Green Banking** provides financing for energy efficient SMEs and environmental infrastructure projects like waste water treatment plants.
- **Small Business Investment Scheme (SBIS)** is a scheme to fund PPE enhancements and small projects for SMEs and was initiated by Islami Bank Bangladesh Limited, which created a separate division to specifically serve various SME financing requirements.
- **Shahjalal Islami Bank** offers a broad portfolio of green financial products, specifically with regards to resource-efficiency enhancements implemented by SMEs

Some other key players include Midland Bank Limited, Lanka Bangla Fin. Limited. and the SME Foundation.

### Challenges for SMEs to access Cleantech Finance

Despite their prominent role for the economic development of Bangladesh, many small and growing SMEs face significant challenges in accessing cleantech finance to enhance sustainability at their production sites. The most prevalent challenges are:

#### Certification Requirements for Cleantech Grants:

While grants usually are a straightforward and relatively accessible source of finance for SMEs, cleantech grants include some additional hurdles for SMEs. Namely, in order to obtain cleantech loans to deploy resource-efficiency technologies, these technologies need to be LAB-certified. This certification entails significant bureaucratic efforts and costs for SMEs, with many of them eventually refraining from even applying for such loans.

#### High Interest Rates for Cleantech Loans:

There are very few loan schemes available with regards to cleantech financing, and with an average of 14% most of them have very high interest rates, which especially smaller industries cannot afford. For example, Bangladesh Bank (the country's central bank) provides "Green Financing" schemes for SMEs at 8-9% interest rate. However, these are only available as conversion of regular loans with a 15-17% conversion rate.

#### Availability of Cleantech in Bangladesh:

Even if financing hurdles are overcome, SMEs planning to decrease their resource footprint and become more sustainable face additional problems in purchasing and installing relevant green technologies. One factor is the necessary technological know-how to evaluate, install and maintain the technologies on site. Another factor is taxes and high tariffs on importing RECP enhancing technologies.



## Cleantech Finance in Nepal

Although Nepal is still recovering from devastating earthquakes 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.

Here, micro and small-scale industries play a key role in contributing to the country's upswing in metal processing. Overall, SMEs constitute about 80% of industrial employment, 70% of the total national export, and around 25% of the country's GDP (ESCAP 2017).

In terms of fostering RECP through appropriate policymaking, 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.

In 2009, a private sector initiative constituted the Energy Efficiency Centre (EEC), which functions as a networking and capacity building platform on energy efficiency in different sectors across Nepal.

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).

There exists only a limited number of financing schemes for cleantech enhancement in Nepal. Some examples include:

- **Financing Energy Efficiency Programme Nepal**, initiated by KfW and implemented by Rastriya Banijya Bank Limited (RBB), has been established to exploit the great potential for energy efficiency in the Nepalese industrial sector.
- **HBL SME Loan** by Himalayan Bank Ltd. specifically finances SMEs' projects and business expansions.
- **Customized SME Loans** by Nabil Bank is a loan scheme aimed to finance SMEs' endeavours to grow working capital or to pay off primary loans.

## Challenges for SMEs to access Cleantech Finance

Despite being key players with regard to economic development in Nepal, an alarming 40% of Nepalese SMEs identifies access to finance as a major obstacle for their business.

### Lack of Comprehensive Cleantech Financing Schemes:

The most important bottleneck for successful RECP in the metal sector is the lack of appropriate financial products distinctly providing finance for RECP measures while at the same time specifically targeting micro and small-scale industries. Corresponding schemes need to be developed and disseminated across the Nepalese financial sector to empower SMEs to engage in RECP at their production sites.



## Cleantech Finance in Sri Lanka

With a booming building and construction sector, Sri Lanka's economy shows high demand for metal products. Micro and small industries are considered a key driver of the economy, contributing to 52% of GDP and 45% of employment (MIC 2018). With rising resource prices and environmental degradation, the country's SMEs are a promising target for implementing 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, which serves as an umbrella policy on cleaner production, while sectoral cleaner production policies and strategies are subsequently developed (MoE 2005). Furthermore, the Ministry of Environment is currently drafting an overarching national policy for sustainable consumption and production (Government of Sri Lanka 2019).

During recent years, the Sri Lankan financial sector has increasingly picked up initiatives to build green banking portfolios. In 2015, 18 commercial banks jointly signed Sustainable Banking Principles (SBPs) to adhere their banking activities to the Sustainable Development Goals (Sri Lanka Banks' Association 2020).

In 2019, the Central Bank launched a "Roadmap for Sustainable Finance" to foster financing for climate resilience projects in Sri Lanka, including energy and resource efficiency projects (Central Bank of Sri Lanka

2019). The roadmap's goal is to scale up contributions from the financial sector towards green growth in Sri Lanka. Apart from infrastructure projects, this entails financing SMEs' efforts to increase sustainability and climate-resilience in their production processes.

As of now, there is a variety of green finance schemes available to SMEs:

- **eFriends II Revolving Fund (GLS)**, provided by LOLC Finance PLC specifically finances measures by SMEs to install technologies that improve resource efficiency and sustainability. Numerous banks across the country are participating in the scheme.
- **Sri Lanka Climate Fund** is providing financial support to foster different aspects of sustainable development, particularly corporate efforts to achieve carbon neutrality. The fund is an initiative of the National Ministry of Mahaweli Development and Environment.
- **Rooftop Solar Power Loan**, implemented by ADB finances solar projects of up to 50kW and is disseminated by the National Bank of Sri Lanka and others.
- **Rooftop Solar Power Generation Line of Credit (RSPGLoc)** from DFCC bank is designed to finance the installation of solar rooftop systems on commercial and residential buildings.
- Through the so-called **DCM CBC-Green DPR scheme**, the International Finance Corporation (IFC) is currently supporting the Commercial Bank of Ceylon with a \$100m loan to enhance its access to finance for energy efficiency projects to SMEs.

Some further loan schemes to provide general growth financing for SMEs are the Small and Medium-Sized Enterprises Line of Credit Project (SMELoC) and the Small and Medium Enterprises Development Scheme (SMED), both issued by Sri Lanka Central Bank. Other players in the field are Seylan Bank, SDB Bank, Central Finance Co PLCc, Sampath Bank PLC and Hatton National Bank.

### Challenges for SMEs to access Cleantech Finance

Regardless of their huge influence on the economic, ecologic as well as social development of Sri Lanka, most SMEs have issues in obtaining cleantech finance to improve their resource efficiency, working standards and overall sustainability. This blocks them from realising promising competitive advantages within and beyond their markets. The most urgent challenges are:

#### Limited Variety of Financing Schemes for RECP:

Even though there are already some financing schemes in place to foster RECP in SMEs, only some of them include loans, while the majority comes in the form of

grants for which only a small range of SMEs is eligible. The market does not provide sufficient other financing schemes, particularly loans, to integrate RECP more comprehensively in the financial market and to include more market players as potential target groups.

#### Lack of Information on Available Cleantech Financing:

With regards to the (mostly grant-based) financing options for RECP, an important hurdle to take is to create awareness for these products amongst SMEs and to convince them of the potential cost advantages to be realised through RECP measures in the medium- and long-term.

### Other Common Challenges in Access to Finance for SMEs

#### High Interest Rates and Collaterals for SME Loans:

With a lack of knowledge on the specific needs and repayment capacities of SMEs, banks usually compensate for this prevailing uncertainty with high interest rates and exorbitant collateral requirements in order to protect themselves from potential SME loan defaults. Interest rates and collaterals, however, increase financing costs for SMEs, which is why many of them eventually refrain from RECP investments, even though these might save production costs and increase profitability in the medium- or long-term.

#### Limited Capacity to apply for Cleantech Loans:

Many SMEs lack the technical skills and financial literacy to cope with the often complex technical and bureaucratic requirements for loan applications and to provide necessary supporting documents. Financial Institutions on the other hand often disregard poorly written applications with incomplete information.

#### Limited Scope of Cleantech Financing:

Even though there are some grant schemes and loans available in the three countries examined in this report, they are mostly limited to increasing renewable energy capacity or energy efficiency. Even though these two belong to core aspects captured by the concept of RECP, many other important facets that require customised cleantech financing opportunities are blended out, such as (solid) waste management, use of primary materials, water efficiency or occupational safety.

### Challenges for Financial Institutions in Cleantech Finance

Problems with increasing the overall effectivity and efficiency of cleantech finance not only arise for SMEs.

Financial Institutions (FIs), willing to lever RECP in their national economies also face some significant challenges:

#### **Lack of Knowledge of Technical Contexts:**

Most FIs lack expertise of the technical and operational reality of SMEs in the metal sector and thus are unable to provide customised financial products or to anticipate problems along the way, such as a lack of financial expertise within SMEs.

#### **Missing Best Practice Examples for Cleantech Finance:**

There exists a great need amongst FIs to connect with each other and to share best practice examples of successful RECP funding for SMEs. Peer-to-peer exchange would be key to disseminate such cases, even if they stem from other sectors or other emerging economies.

#### **Insufficient Mobilisation of SMEs:**

FIs need to stack up their efforts to create awareness for already available schemes for cleantech finance amongst metal industries in order to jump-start SMEs' efforts to obtain such financing.

#### **Small Financial Volumes for RECP Projects:**

Many of the RECP enhancements represent comparatively small projects from a bank's viewpoint, which is why FIs not automatically consider such projects as vital lines of business. RECP is often overlooked in the overall market strategy of financiers.

#### **Lack of acknowledgement of own systemic role:**

Financial Institutions often lack the insights into global environmental and climate agreements and the national policy frameworks and policy goals derived from national governments. As such, they rarely have internalised the systemic role that they as financiers should play in order to initiate, facilitate and enable a national, regional and even global transition towards a green and resource-efficient economy. For many FIs this would require an internal paradigm shift with regards to market strategy and product development.

#### **Recommendations to Improve Cleantech Finance for SMEs:**

- Create platforms for exchange between SMEs and FIs to increase the reciprocal understanding of metal SMEs' operating reality and FIs' evaluation criteria for granting cleantech loans
- Provide capacity building for SMEs on how to apply for RECP-relevant loans

- Make use of existing best practices for cleantech financing and connect FIs across emerging economies to source input on the design of RECP-specific financial products
- Develop prototypes for financial products to increase the variety of best practices for cleantech finance customised for SMEs for others to replicate
- Engage FIs joint collaboration and facilitate handholding from finance intermediaries, particularly organisations with significant technical and/or local expertise with regard to cleantech and RECP, in order to optimise the design and marketing of cleantech financial products

### **The METABUILD Approach: Cleantech Financial Product Prototyping**

In the course of METABUILD, financial institutions have been provided with a framework to collectively conceptualise, refine and implement product prototypes directed towards cleantech finance in their respective country contexts. The framework consists of three core steps, titled "Explore", "Design" and "Implement". These steps are completed subsequently in the course of group workshops.

The first step, "**Explore**", includes four sub-steps, an environment analysis, an internal analysis, a market and customer analysis and an industry analysis.

In the environment analysis, FIs identify the macroeconomic influences that might shape the realm of cleantech financing in their respective countries and rate them based on their time span and perceived relevance throughout the product lifecycle. The macroeconomic influences are then visualised in an environment opportunity map in order to identify key opportunities and challenges to be considered when prototyping new financial products.

In the internal analysis, FIs identify their current customer segments, divide them according to their importance for revenue creation and assign which products are targeted to which customer group(s). Important internal drivers to successfully deliver the products are identified.

In the market and customer analysis, participants estimate the market potential of their current cleantech finance portfolio and potential prototypes within currently unserved market segments, based on a detailed customer analysis in these segments.

In the industry analysis, FIs first collect information on existing cleantech financial products, group them according to a set of characteristics, rate them in a

visual matrix of the two most important characteristics defined (e.g. intensity of customer service / advantageous interest rates) and compare their own positioning in terms of these characteristics.

To conclude this first “Explore” step, all opportunities that have been identified are merged in an opportunity priority matrix, in order to identify which opportunities are the most promising ones for the FIs to realise in the form of new products.

In the second step, “**Design**”, FIs come up with a stakeholder value proposition and the financial product prototyping.

To formulate a stakeholder value proposition, FIs note which values they can offer to each of their stakeholder groups and identify two key values for different stakeholder segments.

The product prototype is conceptualised alongside different dimensions of product characteristics, such as investment size, collateral, risk, maturity etc. FIs compare how strongly different versions of the prototype fulfil the two key values of each stakeholder group in a spider diagram. Based on an iterative assessment of the solution-fit for stakeholders, FIs can then fine-tune and optimise their prototypes.

The “**Implement**” step concludes the prototyping process and consists of an innovation readiness assessment as well as a managerial plan for embedding the prototype in the institutional setting of the FI.

To assess the innovation readiness, participants list the necessary steps towards bringing the product to the market and the resources required for each step. The respective responsibilities for each department within the FI can be listed and visualised in the so-called value chain elevator tool.

Based on that, FIs can then assess which steps are already taken and plan and prioritise the remaining milestones on the road to prototype implementation.

### Highlighted Outcomes of METABUILD related to Cleantech Finance

After concluding the METABUILD activities in the beginning of this year, we look back on achievements in fostering cleantech finance in Bangladesh, Nepal and Sri Lanka:

➔ Trained more than 30 FIs on cleantech financial product prototyping (at least 10 in each country) and provided tailored one-on-one product refinement trainings for 6 FIs (2 in each country).

In Bangladesh, subsequently to these trainings, NRB Bank as well as Jamuna Bank are currently

further carving out their cleantech finance profile based on the prototyping training they received.

In Nepal, Rastriya Banijya Bank Limited (RBBL) is developing a financial product to distribute energy-efficiency credit lines to SMEs, supported by funding through KfW.

In Sri Lanka the National Development Bank is developing a clean tech financial product with additional funding from the Green Climate Fund (GCF), while the National Trust Bank developed a green mortgage product line for the Sri Lankan market.

➔ Facilitated access-to-finance support for more than 130 SMEs in the metal sector.

More than 25% of these SMEs already received financing which they can use to enhance RECP in their production processes.

## Summary

Encouraging cross-stakeholder engagement to foster reciprocal understanding of challenges and to track perceived opportunities and needs around cleantech finance is key in order to smooth future cooperation between SMEs, financial institutions and policy makers in the cleantech finance arena.

Challenges around cleantech finance for SMEs are not exclusively relevant for Bangladesh, Nepal and Sri Lanka. Moreover, these challenges apply to many emerging economies in South Asia and other regions. Increasing best practice experience within the financial sector in these economies could help to foster RECP across South Asia and worldwide.

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## Bibliography

1. Central Bank of Sri Lanka 2019. Roadmap for Sustainable Finance in Sri Lanka. Retrieved 24.02.2020 from: <https://www.cbsl.gov.lk/sites/default/files/Sri%20Lanka%20Sustainable%20Finance%20Roadmap%20FINAL%2008.04.19.pdf>
2. Government of the People's Republic of Bangladesh, Ministry of Planning (2017): Terms of Reference (TOR) for selection of national firm/institution for conducting a Study/Research and Preparing the Report on Study on Future Direction of SMEs in Bangladesh. [https://plandiv.portal.gov.bd/sites/default/files/files/plandiv.portal.gov.bd/notices/afbffe34\\_be4c\\_417d\\_b36c\\_ecf8db4614fc/ToR%20final%20SME.pdf](https://plandiv.portal.gov.bd/sites/default/files/files/plandiv.portal.gov.bd/notices/afbffe34_be4c_417d_b36c_ecf8db4614fc/ToR%20final%20SME.pdf)
3. Government of Sri Lanka 2019. Country Report Draft. Retrieved 24.02.2020 from: [https://www.uncrd.or.jp/content/documents/7413Sri%20Lanka\\_Country%20Report+Front%20page.pdf](https://www.uncrd.or.jp/content/documents/7413Sri%20Lanka_Country%20Report+Front%20page.pdf)
4. PV magazine 2019. Germany provides low cost loan to Bangladesh for renewables. Retrieved 24.02.2020 from: <https://www.pv-magazine.com/2019/07/31/germany-provides-low-cost-loan-to-bangladesh-for-renewables/>
5. Sri Lanka Banks' Association 2020. About the Sustainable Banking Initiative. Retrieved 24.02.2020 from: <https://sustainablebanking.lk/>
6. Sri Lanka Ministry of Environment and Natural Resources 2005. Sri Lanka National Policy and Strategy for Cleaner Production. Retrieved 24.02.2020 from: <https://policy.asiapacificenergy.org/node/1604>
7. Sri Lanka Ministry of Industry and Commerce (2018): National Policy Framework for Small Medium Enterprise (SME) Development. Retrieved 24.02.2020 from: [http://www.industry.gov.lk/web/images/pdf/framew\\_eng.pdf](http://www.industry.gov.lk/web/images/pdf/framew_eng.pdf)
8. Sustainable and Renewable Energy Development Authority (SREDA) and Power Division Ministry of Power, Energy and Mineral Resources Government of the People's Republic of Bangladesh (2015). Energy Efficiency and Conservation Master Plan up to 2030. Retrieved 24.02.2020 from: [http://sreda.gov.bd/files/EEC\\_Master\\_Plan\\_SREDA.pdf](http://sreda.gov.bd/files/EEC_Master_Plan_SREDA.pdf)
9. United Nations Economic and Social Commission for Asia and the Pacific (2017): A Study Report on Access to Finance of Micro, Small and Medium-Sized Enterprises in Nepal. [https://www.unescap.org/sites/default/files/Final%20PPT\\_Access%20to%20Finance%20Nepal\\_Mr.%20Achyut%20H%20Aryal.pdf](https://www.unescap.org/sites/default/files/Final%20PPT_Access%20to%20Finance%20Nepal_Mr.%20Achyut%20H%20Aryal.pdf)
10. World Bank 2019. World Bank to Help Scale Up Renewable Energy Options in Nepal. Retrieved 24.02.2020 from: <https://www.worldbank.org/en/news/press-release/2019/01/31/world-bank-to-help-scale-up-renewable-energy-options-in-nepal>
11. World Bank 2012. Bangladesh Climate Change Resilience Fund. Retrieved 24.02.2020 from: <https://www.worldbank.org/en/news/feature/2012/05/22/bangladesh-climate-change-resilience-fund-bccrf>

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