

Module proposal



INTERNAL

DC programme: Renewable Energy and Energy Efficiency in Bangladesh

TC module: Vocational Training in the Field of Renewable Energy

Project number: 2022.2158.8

Submission of an
offer for a TC module

at an estimated offer price of up to EUR 5,000,000

Parts of the German contribution are to be allocated to contractors.

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List of abbreviations

ADB	Asian Development Bank
ADVANTAGE	Skills Training and Employment Promotion for Women Workers in Bangladesh
ASSET	Accelerating and Strengthening Skills for Economic Transformation
BTEB	Bangladesh Technical Education Board
DTE	Directorate of Technical Education
EE	Energy efficiency
EEGIRE II	Energy Efficiency and Grid Integration of Renewable Energy II
HSC Voc	Higher Secondary Certificate – Vocational Stream
HCDP-21	Human Capital Development Programme for Bangladesh 2021
ILO	International Labour Organization
MoE	Ministry of Education
NGO	Non-governmental organisations
NSDA	National Skills Development Authority
OECD	Organisation for Economic Cooperation and Development
PAP II	Policy Advice for the Promotion of Energy Efficiency and Renewable Energy II
PI	Polytechnic Institute
PRECISE	Professional Education in Industrial and Environmental Safety
ProGRESS	Promoting Gender Responsive Enterprise Development and TVET-Systems
RE	Renewable energies
Skills4SE	Skills Development for Sustainable Energy Solutions
SICIP	Skills for Industry Competitiveness and Innovation Program
SSC Voc	Secondary School Certificate – Vocational Stream
TMED	Technical and Madrasah Education Division of the MoE
TSC	Technical Schools and Colleges
TVET	Technical Vocational Education and Training
TVET4RE	TVET for Renewable Energy

1 Brief description

Title of module	Vocational Training in the Field of Renewable Energy (TVET4RE)
Core area	Climate and energy, just transition
Area of intervention	Renewable energies and energy efficiency
Cooperation outside the agreed core areas	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
DC programme	Renewable Energy and Energy Efficiency in Bangladesh
DC programme objective	Consumers and the environment benefit from the economic, environmental, reliable and efficient provision and use of power in Bangladesh.
Core problem	There are hardly any vocational training offers that can meet the demand for technical specialists in the renewable energy (RE) sector.
Module objective	The Bangladeshi TVET system is more strongly geared towards the needs of the emerging labour market in the sustainable energy sector.
Contribution to national implementation of the 2030 Agenda	Contribution to the National Action Plan of Ministries/Divisions by Targets for the Implementation of SDGs, in particular SDG 4 (quality education), 5 (gender equality), 7 (clean energy), 13 (climate action)
Target group	Students at vocational secondary schools, school leavers; intermediaries: TVET teachers, in-company trainers, managers and specialists from state institutions, companies and NGOs
Lead executing agency	Ministry of Education
Methodological approach (including instruments)	Capacity development measures at all levels, promotion of cooperation between TVET actors, curriculum development; international and national long-term experts, short-term experts, financing arrangements (EUR ---), materials and equipment (EUR ---).
Key outputs	(1) better information on TVET supply and demand; (2) capacity building for TVET actors; (3) improved initial and secondary TVET; (4) improved diploma programmes.
Cooperation arrangements, donor community approach	None
Commission value	Up to EUR 5,000,000
Term	From July 2025 to June 2028 (three years)
Regions/countries to be promoted	Not applicable

2. Positioning the module

2.1 Positioning the module within the DC programme/strategic framework

The **DC programme** Renewable Energy and Energy Efficiency in Bangladesh aims to reduce environmental pollution through the economic, environmental, reliable and efficient provision and use of electricity, while at the same time providing companies and private households with a permanent supply of sufficient and affordable electricity. The proposed TC module TVET4RE contributes to the development and strengthening of formal Technical Vocational Education and Training (TVET) in the field of sustainable energy, which, in the context of this project, includes RE generation and the efficient distribution and use of energy. It contributes to the achievement of programme objective indicator 4 (initial and further training measures). The module also contributes to programme objective indicators 1 (increased RE capacities) and 2 (reduction of greenhouse gas emissions) by providing comprehensive, practice-oriented training for skilled technical workers.

TVET4RE **cooperates** with the TC module Skills Development for Sustainable Energy Solutions (Skills4SE, PN 2020.2123.6), which, in addition to offering short training courses in the field of RE, focuses in particular on the area of energy efficiency (EE). In cooperation with the National Skills Development Authority (NSDA), Skills4SE pursues an approach based on competency-based reskilling and upskilling (skills development). TVET4RE, on the other hand, supports the Ministry of Education (MoE) in improving the system of formal vocational education and training (TVET, see Section 3). The two TC modules thus complement each other in covering all areas of Bangladesh's TVET system (TVET and skills development) and are able to improve both the governance framework as well as interaction and coordination between TVET and skills development by advising common partner institutions, in particular state partners, business associations and employers' organisations. They also complement each other in addressing target groups: TVET4RE is primarily aimed at TVET students and graduates, while Skills4SE focuses primarily on target groups with previous academic qualifications and individuals already in employment.

TVET4RE also **cooperates** with the TC modules Energy Efficiency and Grid Integration of Renewable Energy II (EEGIRE II, PN 2017.2079.6), Transition to Sustainable Mobility (Trans2Mo, PN 2021.2262.0) and Policy Advice for the Promotion of Energy Efficiency and Renewable Energy II (PAP II, PN 2024.2006.5). EEGIRE II addresses the technical requirements for the expansion of grid-connected decentralised solar power systems and benefits from improvements to initial vocational training curricula as a result of TVET4RE and appropriately trained skilled workers. This also applies to the ongoing TC module Trans2Mo, which is creating a more enabling environment for a sustainable electric mobility market. PAP II promotes conditions for a 'green' energy transition, among other things by piloting innovative technologies. TVET4RE will use the training modules developed by PAP II (and its predecessor) for specialist technical topics and software solutions.

FC modules in the electricity sector focus on promoting RE electricity generation (Renewable Energy Programme II & III, IDCOL, PN 2017.6719.3, 2018.6885.0, 2018.7050.0) and promoting investments to modernise and adjust the capacity of the distribution grid (Modernisation of

Electricity Distribution, Smart Grids 1, PN 2016.6797.1, 2016.7018.1). Thanks to TVET4RE, the skilled workers urgently needed for the planning, installation and management of these investment projects are more widely available. Together with the FC modules, TVET4RE thus contributes to the DC programme objective.

DC programme objective			
Consumers and the environment benefit from the economic, environmental, reliable and efficient provision and use of electricity in Bangladesh.			
Indicators	Baseline	Actual value	Target value
DC programme objective indicator 1 The installed RE capacities have risen to 6,145 MW by 2030.	1,205 MW	1,205 MW	6,145 MW (2030)
DC programme objective indicator 2 The German DC contribution will reduce greenhouse gas emissions in Bangladesh.	39,775 t CO _{2eq}	39,775 t CO _{2eq}	850,000 t CO _{2eq} (2027)
DC programme objective indicator 4 1,000 people, 250 of them women, have successfully completed a training course or professional development programme in the field of sustainable energy systems.	100 people, 10 of them women	100 people, 10 of them women	1,000 people, 250 of them women

2.2 Other development measures in the module's specific area of intervention

In addition to its integration into the DC programme Renewable Energy and Energy Efficiency in Bangladesh (see Section 2.1), there are links to the core area of Sustainable Economic Development, Training and Employment and to the related area of intervention, namely Technical and Vocational Education and Training. This results in synergies with the TC modules Professional Education in Industrial and Environmental Safety (PRECISE, PN 2022.2161.2) and Skills Training and Employment Promotion for Women Workers in Bangladesh (ADVANTAGE, PN 2021.2264.6). These come about by improving youth employability and employment (impact level), among other things, by developing labour market-oriented training courses which – with ADVANTAGE in particular – take account of and help reduce existing gender-specific inequalities (outcome level). Together with PRECISE, TVET4RE adopts an integrated approach in advising the common political partner (MoE) on better governance in the TVET sector. TVET4RE supplements these interventions by strengthening the TVET system's ability to respond to the changing needs of the labour market (outcome level). The joint commissioning and implementation of activities (e.g. information and awareness-raising measures and curricula development) enhances the cost-effectiveness and efficiency of the modules.

Financed by the Asian Development Bank (ADB), the Skills for Industry Competitiveness and Innovation Programme (SICIP; 2023-2029; USD 300 million) addresses the skilled labour situation in selected economic sectors, creates inclusive training opportunities for women and disadvantaged groups and promotes green skills. SICIP and TVET4RE work together to strengthen TVET actors and improve the range of green training measures (outcome level). The ADB-funded project TVET Teachers for the Future (2024-2029; USD 150 million) supports Bangladesh's Integrated TVET Development Action Plan by (1) increasing the number of modern, inclusive vocational teacher training programmes; (2) improving the pedagogical and technical skills of teachers and trainers, and (3) improving teacher training and teacher management. Joint coordination with Bangladeshi TVET actors gives rise to synergies with TVET4RE in the training of vocational school teachers in the field of sustainable energy management. This contributes to widespread improvement in the quality of vocational training (outcome level).

The EU initiative Human Capital Development Programme for Bangladesh 2021 (HCDP-21; 2018-2025; EUR 205 million, implemented as budget support, follow-on phase planned) strengthens, among other things, a sustainable and comprehensive TVET system. Synergies with TVET4RE will be generated in policy and process advice on improving TVET governance (outcome level). TVET4RE may be eligible for EU cofinancing for technical advisory services to the Government of Bangladesh as part of budget support. This means there is potential for TVET4RE activities to be scaled up. In addition, it may be possible to link activities in the Bangladeshi TVET system more closely with demand-led EU approaches (such as opportunity-driven TVET, reverse engineering TVET, strategic use of TVET to leverage private sector capital in the Global Gateway context).

The Promoting Gender Responsive Enterprise Development and TVET Systems project (PROGRESS; 2021-2026; CAD 20 million) is a joint initiative of the Government of Bangladesh and the International Labour Organization (ILO), cofinanced by the Government of Canada. Synergies with TVET4RE will be generated through the expansion of gender-responsive training programmes in the field of new technologies (outcome level).

With the Accelerating and Strengthening Skills for Economic Transformation project (ASSET; 2021-2026; USD 500 million), the World Bank is seeking to improve the employment prospects of young people, particularly women and disadvantaged groups, by supporting training and employment and by making the TVET system more responsive and demand driven. TVET4RE and ASSET promote governance of the TVET and skills development systems and their interaction (outcome level) through capacity building and skills development.

No negative interactions are expected.

Donors	Project	Expected synergies at results level
BMZ (TC)	PRECISE	Enhancing youth employability and employment (impact level) Developing labour market-oriented training courses (outcome level) Strengthening TVET governance (outcome level)

BMZ (TC)	ADVANTAGE	Enhancing youth employability and employment, with special reference to young women (impact level) Developing labour market-oriented training courses that take account of and reduce existing gender-specific inequalities (outcome level)
ADB	SICIP	Strengthening the capacities of TVET actors and the skills of their staff to improve the range of green TVET measures (outcome level)
ADB	TVET Teachers for the Future	Achieving widespread improvement in the quality of teaching in the TVET sector (outcome level)
EU	HCDP-21	Providing policy and process advice on improving TVET governance (outcome level)
ILO/Canada	ProGRESS	Expanding gender-responsive training programmes in the field of new technologies (outcome level)
World Bank	ASSET	Promoting governance of the TVET and skills development systems and their interaction (outcome level)

3. Problem and potential analysis (related to the module)

Context in the area of intervention: Demographic dividend, stable macroeconomic conditions and a strong export sector have fuelled rapid growth in Bangladesh (Bertelsmann Stiftung, 2024). Although stark disparities between regions and population groups persist, advancing industrialisation and rising living standards are also boosting demand for cheap electricity. RE is set to play an important role in the growth of electricity generation. RE currently accounts for around 5 per cent of installed capacity (source: SREDA, 2025), but its share of actual electricity generation is less than 2 per cent (source: Bangladesh Power Development Board, 2025). The national expansion target for clean energy as a proportion of the energy mix is 40 per cent in 2041 (Integrated Energy and Power Master Plan, 2023). The National Implementation Plan for the 2030 Agenda also defines targets for RE expansion. However, the TVET system in Bangladesh is not yet well-positioned for the sustainable energy transition. The National Education Policy formulated objectives in 2010 to improve labour market-oriented TVET, and both the National Skills Development Policy of 2022 and the NSDA were set up to create a TVET system which would – in line with the National Action Plan for the implementation of the 2030 Agenda – respond to changes in the labour market in a demand-driven manner. However, there is a lack of reliable information for developing new, more practical and demand-driven training courses. Stronger partnerships with industry in the developing RE sector create opportunities for the use of labour market data. Nevertheless, information on new training opportunities in sought-after professions, including in the sustainable energy industry, is failing to reach many people. In addition, there is still considerable inequality in access to training, for example, among poor and rural population groups. Due to social barriers, women generally have fewer opportunities for education, training and therefore advancement. According to the employment and labour market analysis of the TVET system in Bangladesh (GIZ, 2022),

women are significantly underrepresented (approx. 25%) among both VET students (27%) and teachers (20%), with even lower figures for the technical sectors. Targeted programmes to promote women in technical professions can therefore reduce gender-specific inequalities and tap into the potential for additional skilled labour.

The TVET system in Bangladesh is divided into two areas. NSDA is responsible for skills-based short training courses (skills development). And formal TVET is managed by the MoE, specifically by its Technical and Madrasah Education Division (TMED) and the Directorate of Technical Education (DTE), and regulated by the Bangladesh Technical Education Board (BTEB). Unclear responsibilities and lack of cooperation between MoE/TMED/DTE and BTEB on the one hand and NSDA on the other, as well as understaffing and a lack of institutional capacity and skills, mean that education and training programmes are not tailored to the changing needs of the labour market. Corruption and political instability also hold up implementation. Improving coordination between NSDA and MoE and strengthening the skills and capacities of TVET actors would increase the efficiency and quality of vocational training and its ability to adapt to changes in the labour market.

Formal TVET programmes are offered at the Technical Schools and Colleges (TSCs) where students can obtain a Secondary School Certificate (SSC Voc) after grade 10 or a Higher Secondary Certificate (HSC Voc) after grade 12. While these qualifications do enable students to obtain basic jobs in areas such as installation, operation and maintenance, they do not provide sufficient practice-relevant skills. Young people with an HSC Voc and an interest in a full-fledged profession are thus forced to take a diploma course at a Polytechnic Institute (PI). In other words, they invest a considerable amount of time and are then often overqualified for many jobs. Formal vocational (initial) training courses (certificate courses), which sit between SSC Voc/HSC Voc and diploma programmes, are currently not widely available, although they offer considerable potential for relatively low-threshold, demand-driven training in the field of sustainable energy.

Derivation of the module objective: RE capacities must be expanded and used to ensure low-cost and climate-neutral electricity generation. The prerequisite for this is the availability of trained skilled workers for planning, installing and managing the systems, as well as for sustainable energy use. Despite government efforts to broaden the institutional structure of the TVET system and skills development and to make content more forward-looking, there are few vocational training offers that can meet the demand for skilled technical workers in the RE sector (core problem). The TC module improves the provision of information on the supply and demand of gender-responsive and labour market-oriented TVET, develops the institutional and individual capacities of TVET actors and expands vocational secondary education, certificate courses and diploma training programmes to include topics relating to sustainable energy, including RE generation, efficient distribution and EE. The module objective is therefore as follows: The Bangladeshi TVET system is more strongly geared towards the needs of the emerging labour market in the sustainable energy sector.

Causes and assessment of their changeability: Deeply rooted social norms, traditional gender roles and prejudices on the part of employers and parents regarding women in technical professions often prevent young women from completing technical qualifications or being

available for technical professions. Young women are also unaware of training and employment opportunities in potentially attractive technical professions. The module can address these causes to some extent. Government actors also lack information on the governance of gender-responsive and labour market-oriented TVET. The private sector does not share information about training requirements with the relevant government agencies. The module can address these causes. State TVET actors lack the capacity to shape transformation processes such as the energy transition. Chambers and associations lack an understanding of their tasks and roles in the organisation and implementation of TVET. These causes can be partially addressed by the module. However, corruption and political instability, two of the underlying causes of the lack of a responsive TVET system, are difficult to address. The country's rapid economic growth has fuelled the trend towards competency-based short training courses, which can be developed at low cost but impart only limited knowledge and skills. There is a lack of formal training offers in which comprehensive professional competences can be acquired, especially for new, sophisticated technologies. This can be changed by developing appropriate offers.

Results achieved to date: The cooperation between state TVET actors and the textile industry, funded by the TC module Higher Education and Leadership Development for Sustainable Textiles (PN 2020.2120.2) shows how the quality of vocational training improves (see project progress report of 2023) as soon as companies are involved in the design and implementation of cooperative diploma degree programmes over the long term. With the introduction of the Bangladesh National Qualifications Framework, qualifications and certifications can now be compared, thanks to the ILO project Skills 21 and ADB-funded Skills for Employment Programme. TVET4RE can also be integrated into this framework with the envisaged long-term certificate courses. Both projects also promoted the creation of cooperation mechanisms (Industry Skills Councils, ISCs) between government agencies and the private sector within the TVET system, but this could not be sustained for funding reasons.

4. Objectives, results hypotheses, indicators and partners of the module

4.1 Objectives, target group, results hypotheses and indicators

Module objective:

The Bangladeshi TVET system is more strongly geared towards the needs of the emerging labour market in the sustainable energy sector.

Indicators:

1. The percentage of potential employers involved in implementing training offers in the sustainable energy sector who confirm that students or trainees have skills relevant to the labour market.

Baseline value: 10% of 80 employers surveyed (October 2024)

Target value: 40% of 80 employers surveyed (March 2028)

2. The number of agreements concluded as part of a cooperation format for labour market-oriented TVET in the sustainable energy sector involving state, private sector and civil society stakeholders.

Baseline value: 0 agreements (there are no agreements or no cooperation format as yet) (October 2024)

Target value: 3 agreements (March 2028)

3. The percentage of students surveyed who confirm that the teachers trained under the project in the field of sustainable energy management are competent.

Baseline value: 15% of 500 students surveyed (October 2024)

Target value: 45% of 500 students surveyed (March 2028)

4. The number of young women who have started a vocational training programme in secondary education, a diploma programme or a long-term certificate course in the sustainable energy sector.

Baseline value: 25 young women (October 2024)

Target value: 100 young women (September 2027)

The baseline and target values for module objective indicators 1, 3 and 4 are provisional. They will be reviewed during the first year of implementation and adjusted in the first report in consultation with BMZ where necessary.

The implementation of the 2030 Agenda in Bangladesh is enshrined in the long-term development plan (Perspective Plan of Bangladesh 2021-2041). Priority SDG targets (National Priority Targets) were transferred to the National Action Plan of Ministries/Divisions by Targets for the Implementation of SDGs in 2018. As the indicators for the National Priority Targets are exclusively at impact level, they are not suitable as a basis for module objective indicators.

For further details, see the charts on the results logic and results matrix in the annex.

The **target group** includes TSC students aiming for an intermediate school leaving certificate (SSC Voc) or a higher education entrance qualification (HSC Voc) as well as school graduates starting a formal certificate course or a diploma programme after their SSC Voc or HSC Voc. Intermediaries include teachers and in-company trainers from selected TSCs and PIs. The group of intermediaries also includes managers and specialists from state institutions and private sector actors who are or should be involved in the planning, governance and implementation of formal TVET. On the government side, they include employees in the TVET system under the MoE, i.e. staff from TMED (approx. 70 people), DTE (approx. 60 people) and BTEB (approx. 70 people), but also from NSDA and line ministries that operate their own sector-related TSCs and PIs. On the private sector side, the intermediaries include representatives of sector-relevant professional, business, and employer associations. NGO staff also belong to the group of intermediaries in selected fields of activity, insofar as measures in the TC module are aimed in particular at girls and women in rural regions and marginalised individuals, i.e. people with disabilities and ethnic or religious minorities.

The TC module is based on the following **results hypotheses**:

Output 1 (improved provision of information on TVET supply and demand) improves conditions for the evidence-based design, governance and implementation of labour market-oriented and gender-responsive TVET in the sustainable energy sector. If the relevant TVET actors have access to pertinent labour market data for the sector because dialogue – including with the private sector – is enhanced, and if potential students/trainees and training companies are informed about the resulting opportunities, the Bangladeshi TVET system can be better aligned with the needs of the emerging labour market in the sustainable energy sector (module objective). There are many studies that support parts of the results hypothesis described (including enhancing dialogue between state and private sector TVET actors, use of sectoral labour market analyses, target group-specific information campaigns), even if no single study fully covers all aspects (see, for example, the Organisation for Economic Co-operation and Development (OECD) Skills Strategy 2019). The assumption is that public and private TVET actors are willing to cooperate with each other now and in the future.

Output 2 (capacity building for TVET actors) aims to strengthen the institutional and individual capacities of TVET actors with regard to shaping transformation processes, such as those currently taking place in the sustainable energy sector. The output is based on the results hypothesis that TVET actors are only able to recognise and actively shape current and future transformation processes ('green' sustainability, digitalisation, gender equality, inclusion) if their role in the system has been defined, their institutional basis strengthened, their processes optimised, and staff skill sets are widened. This includes the ability to establish dialogue/coordination mechanisms with the private sector for societal, economic and social change. The OECD has repeatedly emphasised the importance of strengthening institutions and the competences of TVET actors in order to keep pace with social and economic changes (see Skills for a Greener Future: A Global View, OECD, 2019). The assumption is that public and private TVET actors recognise the economic benefits of transformative business models relating to the energy transition and increased employment of women and are willing to work together to strengthen their capacities and skills.

Output 3 (Improved vocational programmes and long-term certificate courses) expands training offers in the vocational branch of secondary education to include elements of sustainable energy management and further develops an initial vocational training course (certificate course) on the subject. This is a targeted response to the high demand for skilled labour in activities of manageable complexity, such as maintenance and repair. The results hypothesis is that the TVET system will be more closely aligned with the needs of the emerging labour market in the sustainable energy sector by adapting existing secondary school training programmes and developing and piloting new long-term certificate courses (module objective). The OECD study Learning for Jobs (2010) sees curricula and the development of new training formats as important instruments for making TVET fit for the future. The assumption is that improving the TVET system will remain a government priority.

Output 4 (Improved diploma programmes) expands existing diploma training programmes to include elements of sustainable energy and thus follows the same results logic as Output 3. By revising existing diploma training programmes, future middle-level technical managers will acquire relevant skills in the areas of planning, installation, operation, distribution and EE. In

addition, the TVET system offers permeable and future-proof training programmes from TSC to PI. Evidence and assumptions correspond to those in Output 3.

BMZ's strategic requirements have been taken into account.

4.2 Executing agency and partner structure

The political partner for the project is the Ministry of Education (MoE).

Following placement of the commission, the political partner (MoE) has the right to demand the services to which it is entitled directly from GIZ. GIZ and the MoE will set out the details in an implementation agreement. BMZ may exercise its rights under the terms of the commission, in particular those arising from the General Agreement, without the approval of MoE.

The MoE has two main divisions: the Technical and Madrasah Education Division (TMED), which is responsible for formal vocational education, and the Secondary and Higher Education Division. The contact for the TC module is therefore TMED.

Implementing partners of the module are the Directorate of Technical Education (DTE) and the Bangladesh Technical Education Board (BTEB). DTE, a sub-department of TMED, is part of the MoE and is responsible for the operational governance of formal TVET, including all state TSCs and PIs. As an independent authority, BTEB reports to the MoE and is responsible for the content and methodology, formal regulation, accreditation and certification of formal TVET programmes. The strong focus on the introduction of a competency-based qualification system under the responsibility of NSDA – and the consequent shifts in responsibility for TVET and training as a whole – prevented planning and governance structures from being adapted and the formal TVET capacities of competent staff from being further developed. This means that the MoE/TMED, DTE and BTEB have a fundamental need for institutional capacity building to manage formal TVET in the context of transformation processes such as 'green' TVET, the efficient use of human resources, the use of digital approaches and gender equality and inclusion.

Key **implementing partners** in the private sector are chambers, business and employers' associations and sector associations. These business associations need to develop the capacity to define their fundamental mandates as private sector representatives and specifically to identify their roles and responsibilities in TVET. As with MoE/TMED, DTE and BTEB, these organisations need support primarily in professionalising their structural and procedural organisation and in developing the skills of staff to enable them to fulfil their roles and responsibilities in TVET.

Other **institutions in the downstream partner structures** include selected TSCs and PIs. These partners require support with regard to the individual capacities of management, administrative and teaching staff as well as institutional capacities (organisational structures and processes). There is a need for capacity development in relation to the aforementioned subject areas (green, digital, gender-responsive, gender-transformative and inclusive TVET). The institutions of the downstream partner structures also include civil society organisations. Although there are many NGOs with extensive experience in TVET, support for girls and women

in particular, and in the inclusive design of living environments, there is nevertheless a need among these partners to strengthen institutional and technical TVET capacities.

5. Module design

5.1 Methodological approach and term

Term: From July 2025 to June 2028 (three years)

Strategy: The section of the Bangladeshi TVET system responsible for planning, governing and implementing formal training is empowered to identify requirements arising from economic, technological, environmental and social transformation and to implement the resulting need for adaptation in training. A core element of the strategy is the promotion of institutionalised dialogue between the private sector and TVET actors in the field of sustainable energy, among other things, to create a reliable information base on which to design activities. Another key element is a comprehensive capacity development approach on several levels: gender-responsive information/awareness-raising campaigns and reliable labour market forecasts improve the information base on supply and demand and boost acceptance of TVET among decision-makers and in society (capacity development level: society). The activities take into account the conflict and risk factors for Bangladesh as identified in the integrated context and human rights analysis. Targeted capacity development measures strengthen the institutions involved, enhance their efficiency and help to counteract staff shortages among TVET actors (organisational level of capacity development). Capacity development for policy-makers, experts and managers among TVET actors and in the private sector, along with the training of teaching and training staff enables them to fulfil their respective roles and responsibilities in the TVET system more efficiently (capacity development at an individual level). The focus is on vocational training for future specialists for the green – and usually also digital – transformation. The strategy includes all subsystems of formal TVET, from initial training and secondary vocational education through to advanced diploma programmes. The project thus ensures that training courses are continuously integrated and promotes permeability in the formal TVET system. Better career opportunities contribute to reducing poverty and inequality. The pilot introduction of TVET offers both inside and outside urban centres also addresses regional inequality to a certain extent. One cross-cutting issue is the promotion of female students, professionals and managers as well as female teachers and in-company trainers through gender-responsive information and awareness-raising campaigns on TVET and employment options, the creation and revision of job profiles, curricula and (digital) teaching and learning materials.

Use of instruments:

Output 1 (Improved provision of information on TVET supply and demand) improves the provision of information for gender-responsive and labour market-oriented governance of basic TVET in the sustainable energy sector. This is achieved, among other things, through the joint collection and evaluation of labour market data for the sector by state TVET actors such as MoE/TMED, DTE, BTEB and business, employers' and trade associations. A public-private dialogue will be established through clearly defined joint activities such as annual surveys of relevant companies, analyses of labour market studies, sectoral economic policy planning and

tracer studies. This dialogue will be further developed into an institutionalised cooperation format for the design, governance and implementation of TVET in the sustainable energy sector. Digital solutions play a key role in the efficient management of data and communication between actors. BTEB is empowered in institutional and personnel terms to manage the mechanism and cooperation format with private sector actors. The information base for young people on training and employment opportunities in the sustainable energy sector will also be improved, based on available data, through gender-responsive information and awareness-raising campaigns. These are also intended to appeal to parents and employers and should therefore bring about a gender-transformative change in social attitudes to women attending TVET courses and finding employment in technical professions.

Output 2 (Capacity development for TVET actors) strengthens the institutional and individual capacities of public and private sector TVET actors through process and organisational consulting to shape transformation processes in a targeted manner. The output helps in assessing the need for capacity development and training, which forms the basis of the output. The analysis contributes to the policy dialogue by developing recommendations for adapting the roles of individual TVET actors. In addition to the activities in Output 1, particular attention will be paid to cooperation between DTE, BTEB and the private sector. In order to promote sustainable networking and cooperation, the project will support working groups and forums in developing a cross-institutional strategy for capacity development. This strategy is based on the findings of the aforementioned analysis and also includes cooperation with NSDA (skills development component in the TVET system). The institution-specific capacity development plans provide for detailed measures for organisational and process advisory services as well as strategies for staff training, particularly to strengthen digital skills. If required by the EU (see Section 2.2), the output can also include a general technical support facility for improving the structure and governance of the TVET system (where applicable, after approval by BMZ as part of a modification offer).

Output 3 (Improved secondary and diploma vocational training) develops new training offers in the vocational branch of secondary education (SSC Voc/HSC Voc) and long-term certificate courses and broadens existing training programmes by sustainable energy elements. The criteria for selecting the institutions where programmes are to be piloted will be developed in collaboration with the DTE. Where possible, the institutions will be located outside urban centres. In addition to revising curricula, Output 3 also strengthens the technical, methodological and didactic skills of teachers and in-company trainers at TSCs and PIs (training of trainers). The output includes the development and testing of innovative strategies for participants to acquire practical professional experience (e.g. subject-specific classroom, training workshop, company internships) and alignment of training content with the needs of the labour market. A gender-responsive expansion of existing curricula to include sustainable energy-related topics makes training programmes more attractive, also for young women. In addition, the output will look at whether training programmes/courses can be modularised in such a way that participants not only acquire a final certificate, but also fulfil the requirements for obtaining national skills certificates according to the Bangladesh National Qualifications Framework (dual certification feasibility study).

Output 4 (Improved diploma training) expands existing diploma programmes at selected PIs with the BTEB to include elements of sustainable energy in order to provide in-depth technical knowledge and develop management skills. This is crucial for the implementation, operation and monitoring of systems and processes in the field of sustainable energy. Three diploma programmes are to be expanded or revised to include topics relating to sustainable energy, including the development of (digital) teaching/learning materials. This also includes a gender-responsive revision and expansion of methodology implementation guidelines for teachers, including relevant training courses (training of trainers). As in Output 3, the involvement of industry in designing the training content will ensure that theory and practice are inter-linked so that the skills acquired meet current and future sectoral requirements, including environmental and resource protection standards.

Outputs	Key activities	Time frame/milestones	Instruments to be used (number, scale)
Output 1	<ul style="list-style-type: none"> - Advising BTEB on sectoral labour market and skills needs analyses in cooperation with the private sector - Advising TVET actors on developing a format for dialogue between BTEB and private sector actors - Advising TVET actors on the development and implementation of information and awareness-raising campaigns 	<p>March 2026: Data collection methods specified</p> <p>October 2026: Information/awareness-raising campaigns designed</p> <p>December 2026: Dialogue format inaugural meeting</p>	---
Output 2	<ul style="list-style-type: none"> - Analysis of capacity-building and training needs of personnel of TVET actors - Capacity development strategy for TVET actors and their employees - Implementing training programmes for employees of TVET actors - Advising TVET actors on improving governance and coordination in the TVET system and on harmonisation with the Skills Development system 	<p>March 2026: Report on the training needs of employees of TVET actors prepared</p> <p>July 2026: Capacity development strategy drafted</p> <p>December 2026: First training measures implemented</p>	---
Output 3	<ul style="list-style-type: none"> - Revising and expanding the SSC Voc and HSC Voc curricula, with a focus on gender 	<p>December 2025: Kick-off workshop for the working group on revising</p>	---

Outputs	Key activities	Time frame/milestones	Instruments to be used (number, scale)
	<ul style="list-style-type: none"> - Developing two labour market-oriented, practice-intensive long training courses at selected schools - Advising TVET actors on innovative concepts for the acquisition of practical professional experience - Implementing a gender-responsive training of trainers programme at selected schools - Conducting a feasibility study for 'dual certification' 	<p>secondary school curricula organised</p> <p>May 2026: Needs analysis of initial training courses completed</p> <p>June 2027: Concept for the school-work transition developed</p>	
Output 4	<ul style="list-style-type: none"> - Advising BTEB on the gender-responsive revision and expansion of three diploma programmes at selected PIs - Advising BTEB on the gender-responsive revision and expansion of methodological implementation guidelines for lecturers, including a training of trainers programme at selected PIs - Advising TVET actors on the development and trialling of innovative concepts for acquiring practical professional experience 	<p>December 2025: Three diploma courses that require revision identified</p> <p>May 2026: Concept for extended practical experience developed</p> <p>August 2026: Kick-off workshop for working group on revising diploma curricula organised</p>	---

5.2 Ensuring the long-term effectiveness of the measures (outcomes)

TVET4RE contributes to achieving the national priority objectives (see Section 3). All outputs are closely coordinated in line with the multi-level approach. All three capacity development levels are addressed (see Section 5.1), and the partner system can therefore be expected to be strengthened in the long term. Capacity building and skills development are central cross-cutting tasks, also with reference to the systemic challenges mentioned in section 3 (including corruption, understaffing, political instability). The project upgrades the TVET system by way of example in the sustainable energy sector and thereby supports the efforts of the Government of Bangladesh, other donors and the private sector in the areas of climate protection, just transition and renewable energies (see Section 3). It is therefore in the interest of the

Bangladeshi partners that the measures (including the curricula that have been developed) be systematically mainstreamed so they can continue to be implemented in the long term.

The module develops and implements innovative approaches to strengthen practical professional experience in formal vocational training – including digital skills. It thus enhances the employability of graduates. New instruments are designed to facilitate the transition of young people from school/first-year training/graduate training to the labour market. In the long term, the TC module thus makes a sustainable contribution to increasing the employment rate of graduates in the sustainable energy sector, particularly among women.

Strong and established cooperation between state TVET actors and the organised private sector is also vital for long-term effectiveness. Tangible successes of joint action increase the likelihood of partners continuing to implement joint measures to strengthen the employment situation – in line with the green transformation – beyond the term of the TC module.

5.3 Partner inputs, combined financing

	Details	Estimated value
Combined financing (donor)	-	-
Partner inputs	Human resources from MoE, TMED, DTE, BTEB to coordinate TVET actors, develop and implement strategy papers and concepts, develop/revise curricula and guidelines (60 expert-months). Rooms and catering for events, dialogue formats, steering committee meetings, training measures.	---

The EU delegation expressed interest during the appraisal mission in cofinancing technical support services through TVET4RE to accompany EU budget support (HC DP-21, see Section 2.2) to improve the structure and governance of the TVET system. Prior approval will be sought, should a cofinancing option materialise.

5.4 Commission value and detailed cost estimate

Up to EUR 5,000,000

6 Assessment of the results and risks of the module

6.1 Assessment of results

General results: The TC module creates the conditions for increased availability of labour market-oriented, gender-responsive TVET in the field of sustainable energy. It contributes to SDG 4 (targets 4.3 and 4.4), SDG 7 and SDG 13. It also contributes to SDG 5 (gender equality) by promoting women's access to TVET for productive employment in the growing RE sector

(see Section 5.1). TVET4RE strengthens the capacities and abilities of state and private sector actors to identify transformation processes at an early stage and to undertake the relevant strategic and operational adjustments in the TVET system.

Economic results: Having access to trained employees helps companies in the RE sector to maximise their productivity potential; in so doing, they create the basis for further economic growth, market development and increased investment in climate-friendly technologies. Making better use of the productive potential of women is also a contributory factor. The module creates new jobs for TSC and PI graduates as well as for skilled workers with professional experience in the sustainable energy sector. In the long term, this will also lead to a more diverse energy mix and thus ease the burden on the national budget. Digitalisation has a major impact on formal TVET in the technologically innovative field of sustainable energy management. Supported by the introduction of digital or hybrid learning formats, the module contributes to digitalisation of the TVET system and, indirectly, to digitalisation of the economy (quality criterion: digitalisation).

Environmental results: The module will indirectly contribute to making the energy sector in Bangladesh more environmentally friendly. In particular, RE expansion and EE gains will lead to a reduction in the use of fossil fuels. Negative environmental impacts (e.g. greenhouse gas and fine particulate emissions) associated with the construction and operation of conventional power plants will be mitigated. Better (technical) training for staff also creates potential for resource efficiency in companies and could reduce environmentally harmful company activities (quality criterion: environmental and climate assessment). Targeted measures to improve climate resilience are not part of the module. However, advisory services enable partners to take into account unintended negative environmental impacts (e.g. deforestation for the construction of wind and solar power plants) when drawing up investment plans and to make provision for suitable countermeasures. Potential environmental impacts are routinely assessed in the Bangladeshi context by means of established environmental impact assessments. The project itself does not pose any environmental risks.

Social results: The new and improved training opportunities enable young adults, and women in particular, to acquire skills that will be in demand in the future labour market and to find new and better employment opportunities in the energy sector and other industrial and service sectors. Many parts of the country do not have equal access to high-quality vocational training. With capacity development planned for TVET providers in regions outside the urban centres as well, the module also contributes to making forward-looking and labour market-oriented training available in less developed parts of the country. Young people will have enhanced opportunities for productive work, which could lead to improvement in the rural electricity supply at impact level. The module thus contributes to reducing poverty and inequality (quality criterion: poverty reduction and inequality reduction). It is therefore aligned with the principle of leaving no one behind (LNOB), which is a key priority for the Government of Bangladesh and will help foster peaceful and inclusive development in the country (quality criterion: conflict sensitivity). The digitalisation of training programmes, awareness-raising campaigns, inclusive and gender-sensitive teaching and learning materials, part-time training programmes and other gender-related strategies (see Section 5) help to facilitate access for women to education and training in the male-dominated energy sector (quality criterion: human rights, gender equality).

and disability inclusion). By providing support for cooperation between the public and private sectors in the TVET system and for multi-stakeholder dialogue forums, which also include civil society organisations, the project fosters good governance and helps fight corruption, on the basis of participation and shared responsibility (quality criterion: anti-corruption and integrity). No human rights violations were identified in the TVET sector in Bangladesh. Direct negative impacts on human rights are not expected.

Conclusions for the module design: The results described above were taken into account in the module design as follows: (1) In identifying the core problem, political, strategic and economic aspects were addressed, as these play a major role in ensuring that decision-makers in the government and in the private sector are open to change. (2) The project design is geared towards implementing the national 2030 Agenda. Improving the training programmes for ‘green’ energy systems will contribute indirectly to promoting the energy transition process in Bangladesh. (3) The project design underlines the importance of close cooperation between decision-makers from the government and the private sector who are willing to change and are closely involved in the planning, financing and implementation of measures as well as in the dissemination of results. This is reflected in the hypotheses developed for outputs 1-4. Achieving these results requires an active contribution from the partner institutions involved. (4) Consequently, the module’s capacity development strategy (see Section 5.1) focuses on strengthening the technical, strategic and management skills of policy-makers, experts and managers in institutions of the downstream partner structure in line with Section 4.2. The module uses mechanisms to identify unintended negative effects at an early stage and initiate appropriate countermeasures. This includes the implementation of activities in line with the ‘do no harm’ principle as well as a gender-sensitive, impact-oriented monitoring system, which additionally serves as a steering instrument for strategic decisions (quality criterion: conflict sensitivity). This ensures maximum transparency during implementation and a focus on multi-actor processes to combat corruption (quality criterion: anti-corruption and integrity).

Markers are summarised in tabular form in Annex 4a. Readers are also referred to the in-depth checks on the quality criteria (1) human rights, gender equality and disability inclusion and (6) conflict sensitivity (‘do-no-harm’ approach) in the annex.

6.2 Assessment of risks to the effectiveness of the module

Political risks: Ongoing conflicts in the country following the parliamentary elections held in January 2024 impact the country’s internal stability and call for close monitoring and security and risk management. Overlapping political mandates in the area of formal vocational education/TVET (MoE/TMED/DTE and BTEB) and competency-based training (NSDA) make the implementation of TVET and training projects a politically sensitive matter. The NSDA reports directly to the Prime Minister’s Office and has the legal mandate to coordinate the entire TVET and training sector. Cooperation with only one of the two institutions as a political partner (MoE) may therefore harbour political risks in some cases. These risks are countered by consistently involving all relevant TVET actors and by supporting interministerial coordination.

Implementation risks: The aforementioned political risks also harbour implementation risks, as decision-making processes (particularly at the political partner MoE/TMED) can be delayed

and the complex partner landscape in the TVET sector may result in lengthy coordination processes or the blocking of measures. Strategies to minimise risks lie in the careful early coordination of activities and promotion of transparent communication and cooperation between the relevant stakeholders. Another implementation risk is understaffing at MoE/TMED/DTE and BTEB and frequent staff turnover, particularly at management level, partly as a result of the political unrest. The module will address the risk related to capacity development measures at all hierarchical levels to partially counteract understaffing by increasing efficiency and to ensure operational continuity even in the event of changes at management level. The reluctance on the part of TVET institutions and companies to cooperate with each other can make it difficult to develop practice-oriented curricula, which is why the willingness to enter into partnerships with companies must be a key criterion in the selection of educational institutions. Other risks include the possibility of TVET institutions being unwilling to offer TVET programmes for women or to open these up to women, as well as reluctance on the part of companies to offer practical phases as part of training programmes. The module counters this risk with targeted gender-responsive information and awareness-raising measures.

Risk to long-term mainstreaming: One risk to the long-term mainstreaming of this system may lie in the relevant TVET actors being increasingly disinclined to continue promoting the school-based formal TVET system and to provide the requisite funding. This risk is exacerbated by the usually limited funds provided for TVET (lack of funds for staff, equipment and consumables). Further risks to long-term mainstreaming lie in the still limited demand on the part of companies for skilled workers in the sustainable energy sector and limited interest among school leavers in a corresponding training programme. Both risks can be countered to some extent by providing evidence-based advice and by raising awareness among decision-makers in companies, in the public sector, and among potential trainees.

Impact of the measure on the natural and social environment (unintended results): Promoting the technical skills of (potential) employees allows companies to make better use of their growth potential, which in turn can lead to the increased consumption of resources (water, energy, raw materials). This unintended impact on the environment is countered by taking into account aspects of environmental protection and climate action in TVET programmes. The gender-responsive approaches of the TC module can, to a certain extent, initiate changes in the deeply rooted patriarchal structures within society. However, overall scepticism about the training and employment of women in technical professions can only be influenced to a very limited degree. In the context of implementation, this can be manifested in domestic violence and sexual harassment of women. This is addressed by designing the module in a context-sensitive manner and by including men in gender-responsive measures.

Corruption risks: Corruption in Bangladesh is endemic and rife. In 2024, the country was ranked 151st out of 180 countries on the Corruption Perceptions Index. There is little confidence in government transparency. Possible corruption risks lie above all in the process for selecting TVET institutions to be supported by the module through the MoE/DTE. If, for example, technically unsuitable institutions are selected that are not inclined to cooperate with the private sector, it will not be possible to develop curricula relevant to the labour market. There is also the risk of corruption in the selection of intermediaries to take part in training programmes. In addition to the misallocation of project funds and perpetuation of corruption, a

potential unintended result is the promotion of elites, which means that certain target groups do not benefit from the positive impacts of TVET4RE. The application of fair and transparent selection criteria and processes can strengthen the governance structure of partners and minimise risk.

The **overall risk** is rated as medium, as is its influenceability.

Risk	Rating*	Influenceability*	Risk management measure (already in place)
Political risks	2	2	
<ul style="list-style-type: none"> Ongoing conflicts in the country influence the internal stability and decision-making ability of political partners Overlapping mandates of MoE/TMED/DTE and BTEB as well as NSDA make the implementation of TVET projects politically sensitive 			<ul style="list-style-type: none"> Close monitoring paired with GIZ security risk management measures Involvement of all relevant TVET actors Support for interministerial coordination between the ministries responsible for education, labour and employment, industry, and for environment, forest and climate.
Implementation risks	2	2	
<ul style="list-style-type: none"> Lengthy bureaucratic processes, shifting mandates and the blocking of measures because the responsibilities of MoE/TMED/DTE, BTEB and NSDA are not clearly defined Understaffing at political partner authorities and implementing authorities Lack of opportunities for target groups (particularly women) to take advantage of TVET programmes Reluctance on the part of TVET institutions and companies to cooperate with each other 			<ul style="list-style-type: none"> Early sectoral coordination with relevant authorities and international development cooperation actors Gender-sensitive information campaigns for the target groups Willingness to cooperate with companies as a key selection criterion Targeted gender-responsive information and awareness-raising campaigns to open up vocational training opportunities to women
Risks to long-term mainstreaming	2	2	
<ul style="list-style-type: none"> Limited demand from companies for skilled workers in the sustainable energy sector 			<ul style="list-style-type: none"> Advice and information for decision-makers in companies, the public sector and potential trainees Enhanced efficiency of public authorities through capacity development and leveraging of support

Risk	Rating*	Influenceability*	Risk management measure (already in place)
<ul style="list-style-type: none"> Chronic underfunding by the authorities poses a risk to the long-term mainstreaming of sustainable structures 			services from the private sector (e.g. in the collection of labour market data)
Impact of the measure on the natural and social environment (unintended impacts)	2	2	
<ul style="list-style-type: none"> Insufficient consideration of environmental aspects in educational programs. Increased pressure on natural resources and resettlement of the local population as an indirect effect of training activities Reactance to changes in gender relations initiated by the project 			<ul style="list-style-type: none"> Consideration of possible negative environmental impacts and provision for countermeasures in educational programmes Context-sensitive module design, inclusion of men in gender-responsive measures
Corruption risks (VI063)	3	2	
<ul style="list-style-type: none"> Widespread corruption Selection of TVET institutions, intermediaries and participants who will benefit from the project activities. 			<ul style="list-style-type: none"> Transparent selection procedures in TVET and qualification measures
Overall risk	2	2	

*) Levels 1=low, 2=medium, 3=high, 4=very high

6.3 Declaration

After a review of alternative options, the TC measure presented here and its modes of implementation are held to yield the most favourable relationship between the purpose of the TC measure and the funds to be used. The country strategies and programmes as well as BMZ's binding thematic governance documents¹ have been taken into account during planning.