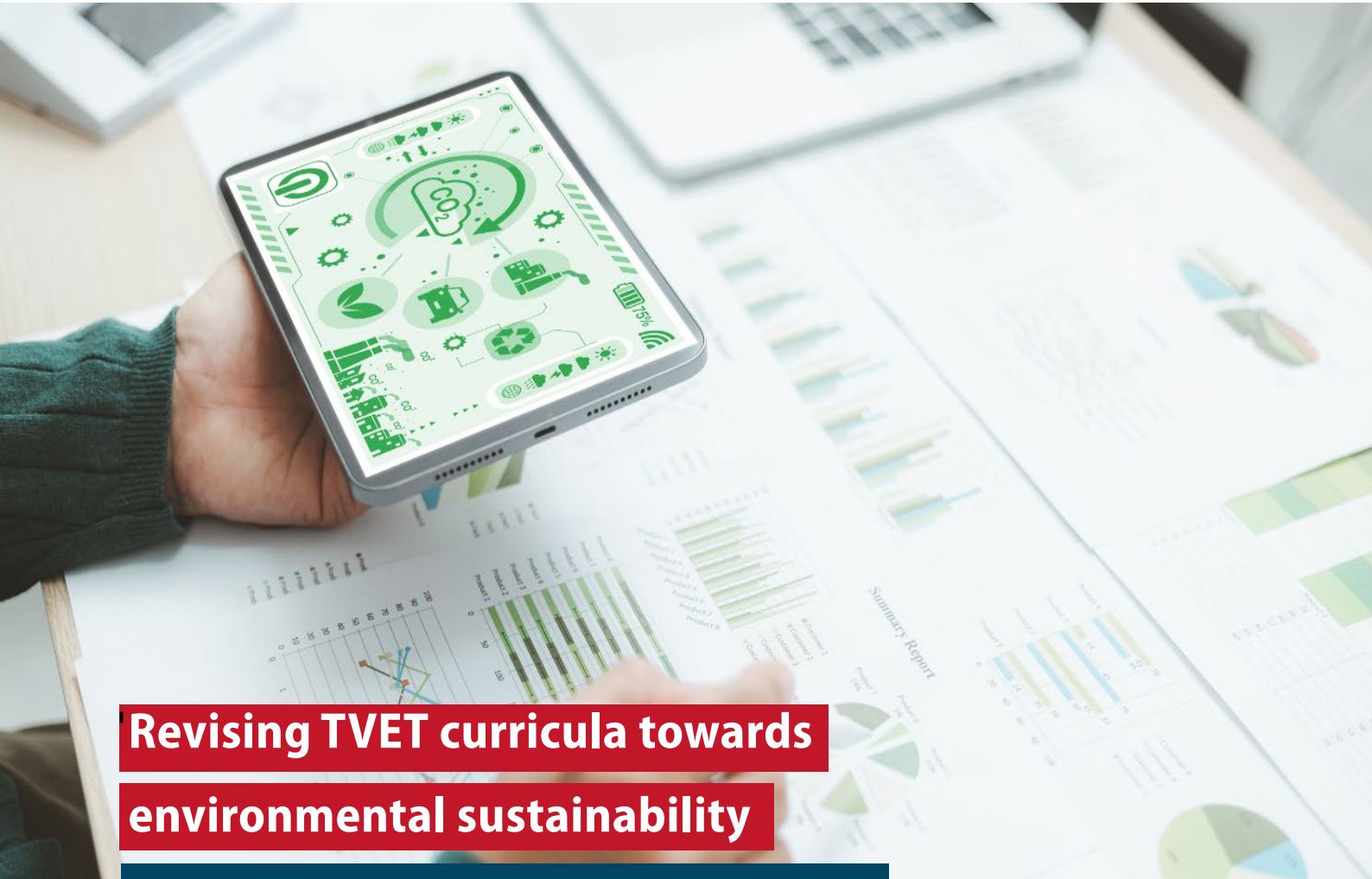




Revising TVET curricula towards environmental sustainability

How to develop new curricula and create a sustainability culture in TVET institutions

Promising Practice

Implemented by: Technical and Vocational Training Corporation (TVTC)

Where: Saudi Arabia

Status: Initially started in May 2023 and completed in April 2025, with continuous updates and adaptations

Summary: Technical and Vocational Training Corporation (TVTC) is the organization in Saudi Arabia responsible for revising existing vocational programmes, curricula and qualifications to adjust to and integrate new knowledge, skills and practices which align with environmentally sustainable concepts. TVTC is responsible for training trainers to deliver an adjusted curriculum.

Overview

The Saudi Arabian Technical and Vocational Training Corporation (TVTC) is the lead body overseeing TVET provision. Currently, training in environment sustainability is offered in 89 vocational programmes. Training in 'green' principles is offered in programmes regardless of whether they are directly related to environment-related sectors. Industry sectors requiring 'green' training include energy, logistics, tourism and others. The context for this provision is the Sustainable Development Goals, which are included in Saudi Vision 2030¹. The initiative is also aligned with several broader actions to improve TVET training and to improve its responsiveness to new labour market skills needs. Within this context, TVTC is expected to:

- Strengthen its role as a key driver of the green transformation.
- Integrate sustainability into curricula and institutional culture to achieve long-term environmental and social benefits.
- Foster innovation, critical thinking and awareness of sustainability across all training sectors.
- Equip trainees with green skills needed to meet labour market needs.
- Equip trainers with the knowledge and skills necessary to effectively deliver green programmes.

Description

TVTC has been tasked with adjusting TVET curricula to integrate sustainability concepts and green training in alignment with new jobs and labour market needs. This process has been carried out by the General Directorate of Curricula (GDC) at TVTC, which has taken several steps outlined below. Their work has been conducted

within existing funding and human resource constraints alongside other initiatives to improve the labour market responsiveness of TVET programmes.

The GDC established specialist committees of curriculum experts, sector representatives and trainers to revise existing programmes and to support the planning, implementation and evaluation processes.

The committees assessed what knowledge, skills and competencies were required by the labour market and in new jobs and occupations, especially in emerging sectors such as renewable energy technologies. The process was accomplished through the pathway illustrated in Figure 1.1.

Programme classification

The GDC led multiple workshops to analyse existing vocational programmes and occupational profiles according to labour market research conducted both nationally and internationally. Vocational programmes were classified into three categories according to how they are impacted by new training requirements:

1. **Directly related programmes**, which **must** have at least one course directly linked to environmental sustainability according to international classifications. For these programmes, separate professional competencies were developed covering green training, energy efficiency and sustainability.
2. **Partially related programmes**, which **should** have at least one course that is partially linked to environmental sustainability.
3. **Indirectly related programmes**, which include a more general approach to sustainability and green practices through raising awareness.

¹ See Saudi Vision 2030, <https://www.vision2030.gov.sa/en>

Figure 1.1. 'Fundamentals and Methodologies of Green Training, Energy Efficiency, and Sustainability'

Greening curricula and training

Methodology for classifying training programs according to business needs and green jobs requirements

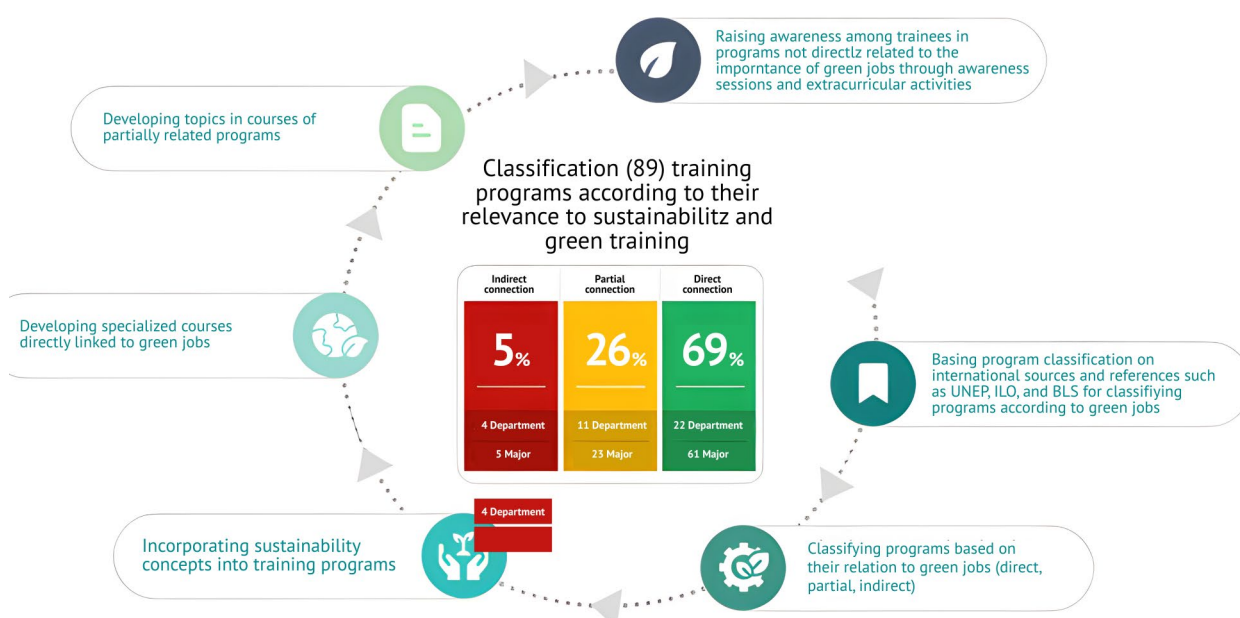


Table 1.1. List of learning aims for Green Training, Energy Efficiency and Sustainability courses

Green training	Energy efficiency	Sustainability
Raising awareness, knowledge and skills to balance the current and future needs of individuals and institutions within society to protect the environment.	Reduce energy consumption whilst maintaining performance quality.	Ability to meet the needs of the present generation without compromising the ability of future generations to meet their own needs.
Awareness/knowledge of: • Environmental concepts • Environmental issues • Sustainability and its impact on society and environment • Cleaner production techniques • Waste management • Use of renewable energy • Community engagement and participation • Community environment initiatives including in training providers • Beneficial impact on society and economy • Benefits of skills in environmental fields e.g., clean technology	Awareness/knowledge of: • Concepts of different types of energy and how to use them efficiently • Assessing/monitoring current energy consumption • Saving energy at home and work • Renewable energy technology • Encouraging the design of energy efficient systems and devices • Selecting energy efficient components	Awareness/knowledge of: • Strategies to capitalize on sustainability opportunities • Principles of sustainable design and planning in projects and products • Using renewable natural resources and improving energy/resource efficiency • Designing for long life and recycling • Environmental and social issues • Renewable energy technology and smart management technology

The specialist committees assessed what type of course was relevant to each programme type (direct, partial and indirect). The majority of programmes were assessed to have a **direct** (69%) or **partial** (26%) connection.

Incorporating sustainability concepts into training programmes

Three types of courses were developed (green training, energy efficiency and sustainability) by the GDC with multiple modules and sub-modules which were applicable across all types of programme and/or tied to the content of an individual vocational programme. The learning aims are described in Table 1.1. below. Vocational programmes assessed as having a direct or partial connection had new training plans designed to incorporate new training units, practical activities and project-based assignments aligned with new learning goals. Students of indirectly related programmes receive a generic set of courses on, for example, the importance of seeking energy efficiency.

The learning aims of each course are expected to meet a clear set of goals. For example, the sustainability courses and training modules should meet the goals elucidated in Figure 1.2.

Figure 1.2. Sustainability Goals



Objectives

Sustainability is prioritized in the Vision 2030. The goal is to develop a training model which aligns with shifting jobs and labour market skills demands. TVET students must be equipped with the skills and knowledge needed for new 'green' jobs; therefore, trainers must strengthen their capability to deliver courses that provide trainees/students with the necessary skills. Trainers must also be able to encourage and develop their students' critical thinking and innovation abilities applicable to improving environmental and sustainability considerations in their future jobs.

TVTC colleges have also implemented initiatives and projects related to their own sustainability practices. For example, they have developed initiatives and projects focused on sustainable management of natural resources. These initiatives and projects are shown in Figure 1.3.

Outcomes and impact

Adapting curricula for emerging jobs in green technology and new labour market requirements for sustainability skills has had many benefits, including:

- Vocational programmes have been adjusted allowing students to receive the skills, knowledge and competencies needed.
- Issues of environmental sustainability and new and innovative practices have been embedded into training curricula and its delivery.
- New opportunities for community engagement have been developed.

Figure 1.3. Sustainability projects at TVTC colleges



- Teachers/trainers have acquired skills such as risk analysis to assess, interpret and understand factors associated with sustainable development within all training programmes. They are equipped to utilize interactive training methods and to develop their competency in sustainability concepts.
- Students have learnt about environmental and social responsibility and are encouraged to think innovatively and critically about how they approach environmental issues in their chosen programme and occupation.

As well as improving training programmes, innovation in environmental sustainability has been encouraged within and amongst training providers to improve resource conservation, energy and material efficiency to reduce water consumption, waste and pollution and to improve recycling systems.

There has been a wider community impact as stakeholders work together for common environmental goals. This can be an example to other government entities in engaging and encouraging stakeholders to contribute to common environmental objectives.

Conclusions and next steps

This initiative is backed by strong institutional interest and commitment from senior officials. It is being actively monitored for impact and to ensure effective implementation. The initiative also fits within other broader policy aims to improve the employment rates of young people and to innovate and diversify the Saudi economy elucidated in the Vision 2030.

Going forward, this model of collaboration will continue. A strong monitoring and evaluation framework supported by regular occupational analysis and labour market studies provides a robust model of feedback into the training system to adjust and adapt.

Learn more

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To learn more about TVTC, see: <https://tvtc.gov.sa/ar/Pages/default1.aspx>

For more information, see: <https://tvtc.gov.sa/ar/Departments/tvtcdepartments/cdd/Pages/default.aspx>

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