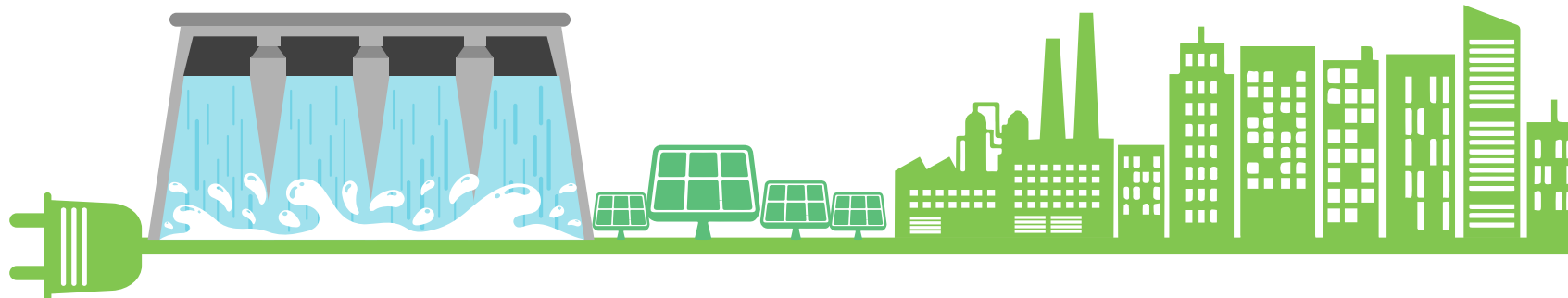


# “SOSTENIBILIDAD Y TRANSICIÓN VERDE EN LA EDUCACIÓN Y FORMACIÓN PROFESIONAL DUAL.”

31 de agosto de 2023  
Plataforma Zoom



# Decarbonization Digitization (Demography) TVET and sustainable supply chains

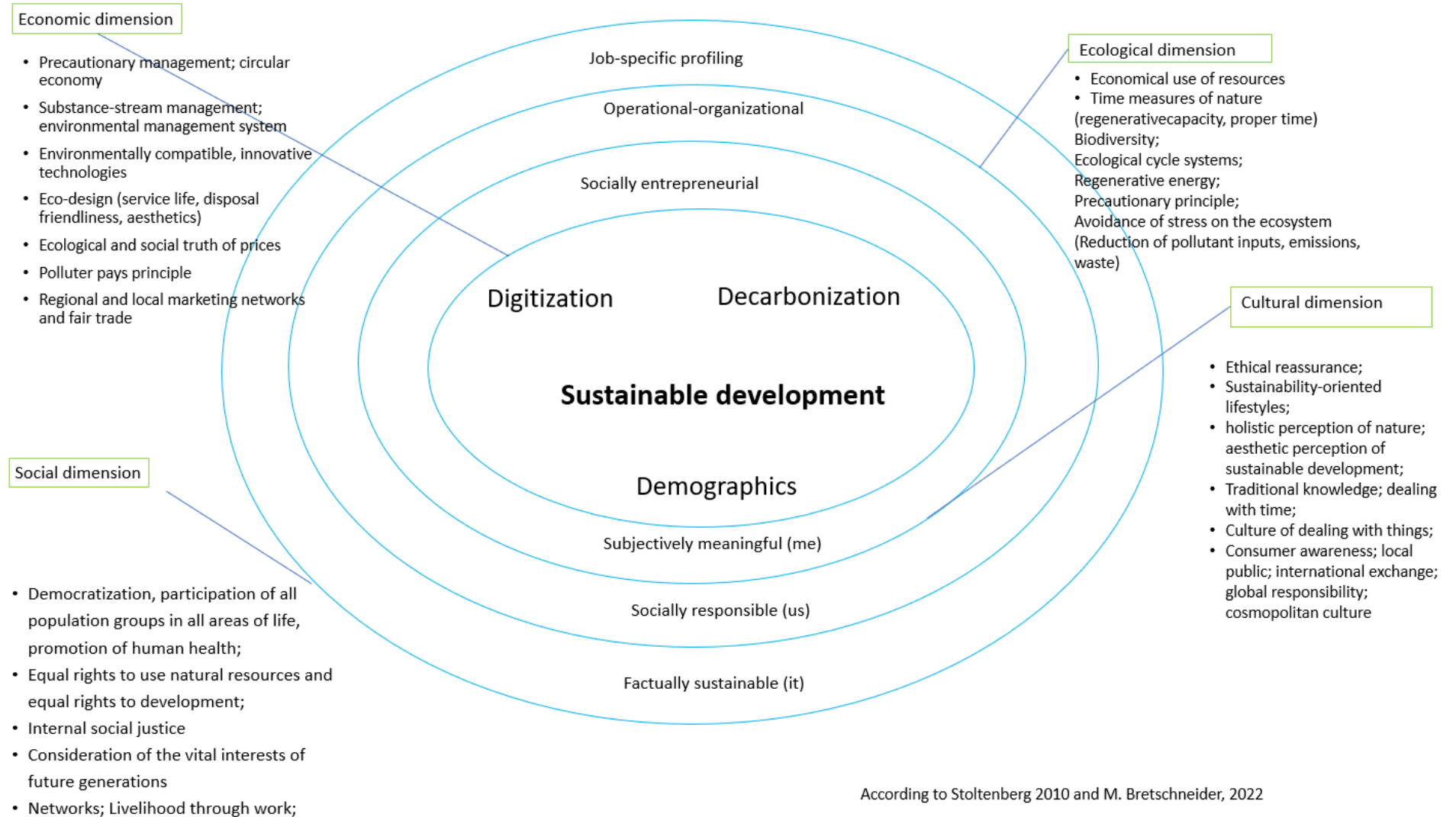
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(BIBB)

# Topics

- I. **Understanding and dimensions of sustainability**
  - a. Thinking sustainability and vocational training together
  - b. General education - environmental education and permeability of the vocational training system
  
- II. **Ways to sustainable education and training**
  - a. School as a place of learning - environmental education and permeability of the vocational training system
  - b. Learning site company - supply chains and sustainability management
  
- III. **Climate-relevant job profiles**
  
- IV. **Structural mechanisms and governance**
  - a. Standard job description positions
  - b. Research approaches – foresight

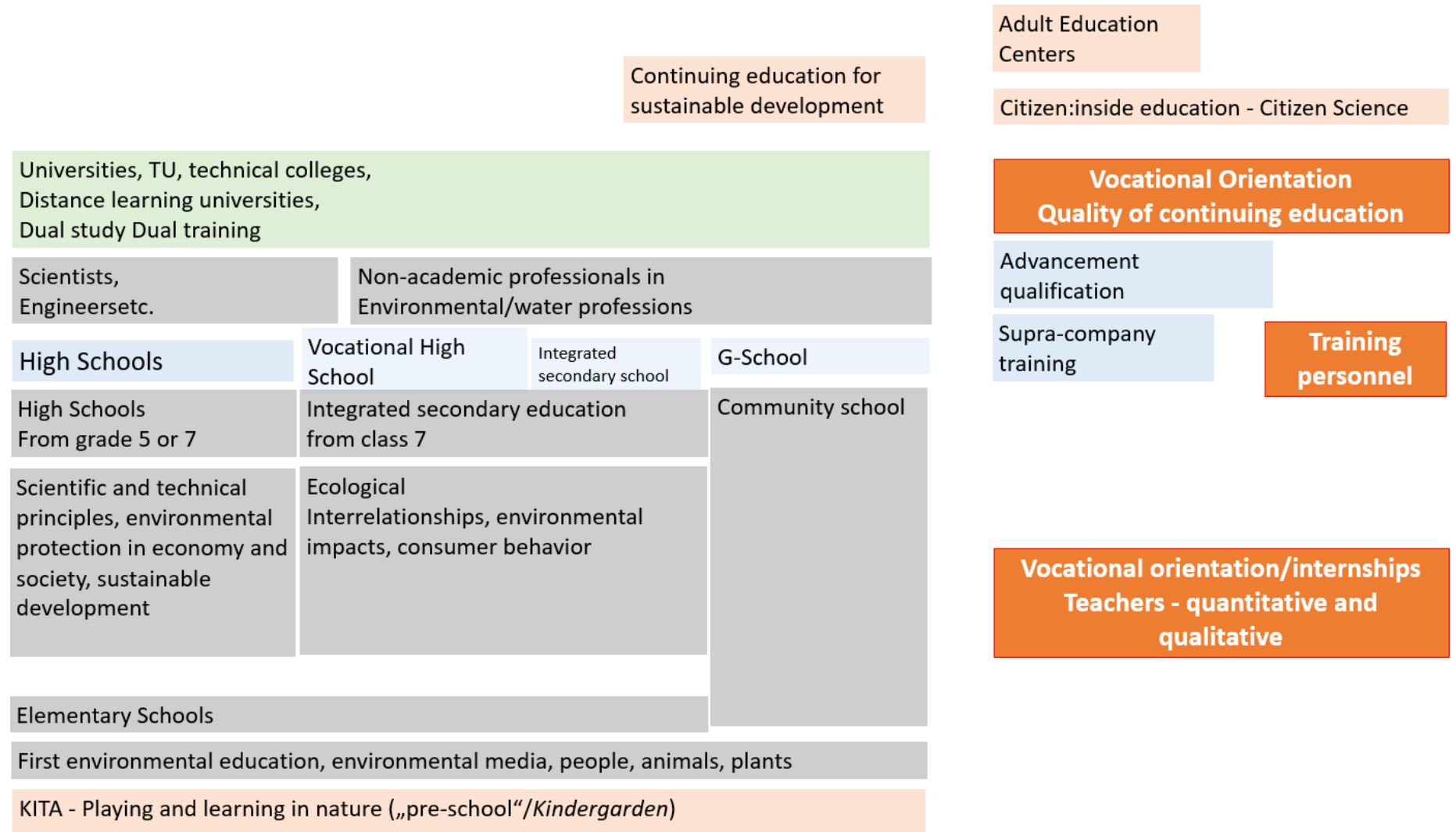
**Summary**

I. Understanding and dimensions of sustainability  
a. Thinking sustainability and vocational training together



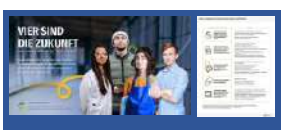
## I. Understanding and dimensions of sustainability

### b. General education - environmental education and permeability of the vocational training system





**Cross cutting competence – sustainability and environment**



**Occupational profile positions/knowledge and skills**

in work processes and with regard to products, goods or services, materials or services, materials and energy under materials and energy under economic, environmental and social and social aspects of sustainability

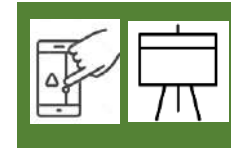
Possibilities for avoiding operational burdens for the environment and society in their own area of responsibility recognize and contribute to their further development

- Origin and production**
- Transport routes
  - service life and long-term usability
  - Ecological and social footprint of products and services or of value creation processes.
  - test seals and certificates, e.g.:
    - fair trade
    - regionality
    - ecological production
- Resource intensity and social significance of business and work processes or value chains.**
- Analysis of consumption data
  - Perception and avoidance or reduction of burdens, e.g.:
    - Noise
    - Exhaust air, wastewater, waste
    - hazardous substances
  - Rational use of energy and resources, e.g.:
    - Equipment running times
    - Maintenance
    - Service life of products
    - Handling of storage and print media
  - Waste avoidance and separation.
    - Recycling, e.g.:
      - Recyclables
      - Recycling
      - Repair
      - Reuse
  - Sensitivity to environmental pollution, also in adjacent work areas

**Logistics**



**Distribution Management**



**Sales person eCommerce**



**Baker**

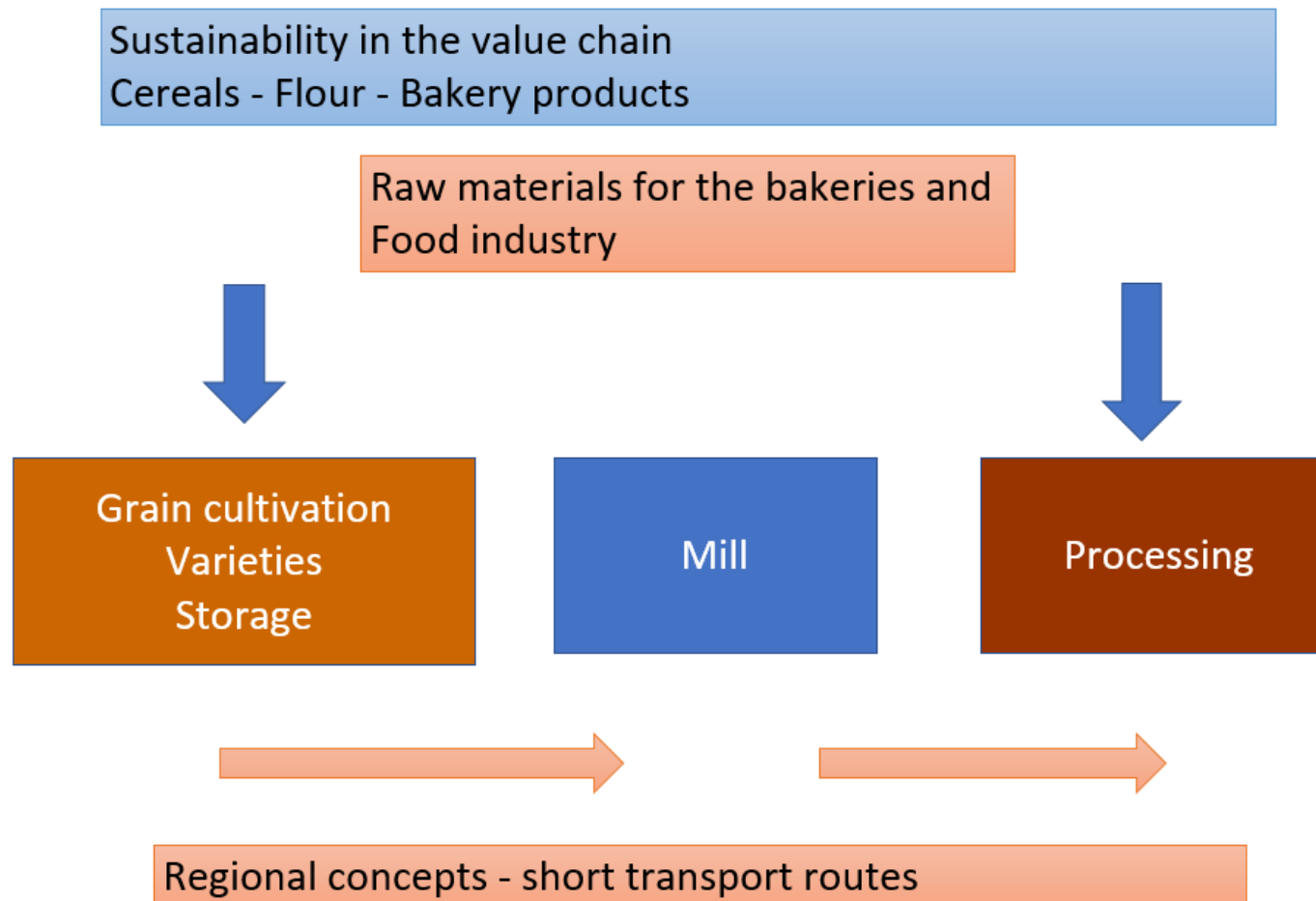


**Miller technologist**



## II. Ways to sustainable education and training

### a. School as a place of learning - environmental education and permeability of the vocational training system



## II. Ways to sustainable education and training

### a. School as a place of learning - environmental education and permeability of the vocational training system

Action level	Field of action
Lesson/ Learning group	Teacher competencies, materials, textbooks, student competencies, instructional development.
School	School profiles, school life, school curricula, school management including budgets, parent participation, school development
School Board, Inspection	Quality assurance, (system) consulting, budget management
Ministries, subordinate Authorities	Legal framework in the sector, budget, curricula/curricula, quality framework, exams.
Universities, study seminars, State Institutes	Education and training
Colleges, universities	Research and teaching in educational science and didactics
Out-of-school education providers: NGOs, denominational institutions	Educational projects, partnerships, experts, extracurricular venues



## Sustainability - International Brasil



## Cooperativa Agrária Pinhão - PR



Source: Christos G. Athanassiou

## II. Ways to sustainable education and training

### b. Learning site company - supply chains and sustainability management

#### What can management do

- Qualification of vocational training staff as promoters of sustainability in the learning venues of vocational training.
- Teaching by full-time and part-time training staff of relevant job-specific and cross-job sustainability skills and relevant sustainability aspects of company teaching/learning environments.
- Qualification of trainees as junior experts for sustainability in the company.
- Appreciation of the sustainability contributions of trainees and instructors and publicizing them within the company
- Internal evaluation of the systematic integration of sustainability in the training process and monitoring of the development into a sustainable place of learning.

#### What can trainees actively do

- Record videos and podcasts
- Create flyers and brochures
- Create sustainability team
- Support Human Rights
- Mentoring of other trainees
- Organize events
- 5-minute calls
  - Current developments in sustainability (Economics, Politics and society)
  - Discussion of own points of view (personal and professional)
  - Business games in which trainees take on the roles of decision-makers along real processes

## III. Climate-relevant job profiles

### Climate Careers

- Plant mechanic, Electrician, Electronics technician
- Heating engineer, gas and water fitter
- Plant mechanic for sanitary, heating and air conditioning technology (SHK)
- Electronics technician for energy and building technology
- Electronics technician for building systems integration
- Roofer with focus on energy technology on roof and wall
- Painter
- Industrial clerks

### Environmental professions -

- Specialists for water supply technology
- Specialists for wastewater technology
- Specialists for pipe, sewer and industrial service
- Specialists for recycling and waste management

### Green professions -

Apprenticeships in the agricultural sector, the "Green 14", environmental and climate protection in handling with soils, plants and animals and modern technology

### Electromobility (20 professions)

- Electrical and IT industry and skilled trades and in the automotive trade
- Railwayman: in the operational service (locomotive driver and transport)
- Professional driver
- Railroad and road transport clerks, transport service clerks
- Railroad worker: train traffic control, track builder

### Merchants

- Wholesale and foreign trade management assistants
- Retail salespersons

### Environmentally friendly packaging

- Paper technologist
- Packaging technologist

## IV. Structural mechanisms and governance

### a. Standard job description positions

# BIBB HA Recommendation No. 172

**Standard goes beyond the effective date in occupations from 01.08.2021:**



"In addition, the BIBB Board recommends that training companies and vocational schools should already **teach** these **modernized standard occupational profile items as an integral part of the training for all training occupations under the BBiG and HwO** in conjunction with subject-specific skills, knowledge and abilities throughout the entire training program, even if they are not yet included in all training regulations.

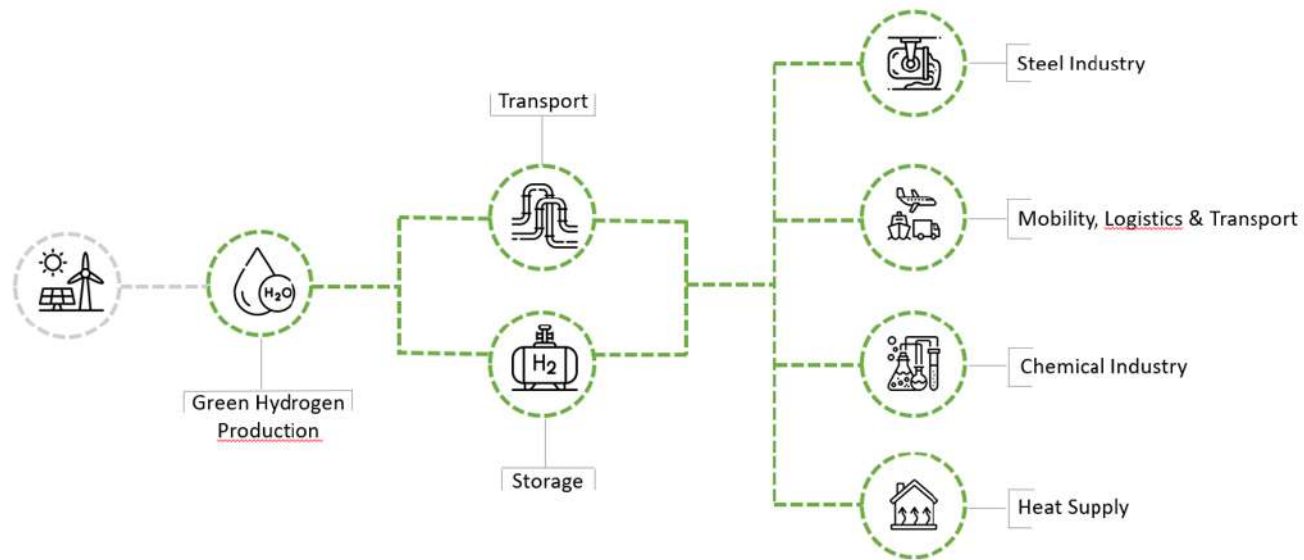
It appeals to all players in vocational education and training to **actively support** this by drawing the attention of training companies and vocational schools to this recommendation of the main committee and the importance of the new standard vocational training positions for the world of work of the future in various ways, by promoting their implementation and by providing them with suitable support in doing so."

Source: <https://www.bibb.de/dokumente/pdf/HA172.pdf>

## IV. Structural mechanisms and governance

### b. Research approaches – foresight

Assess changing **skills requirements** and **qualification gaps** in skilled occupations along the hydrogen value chain

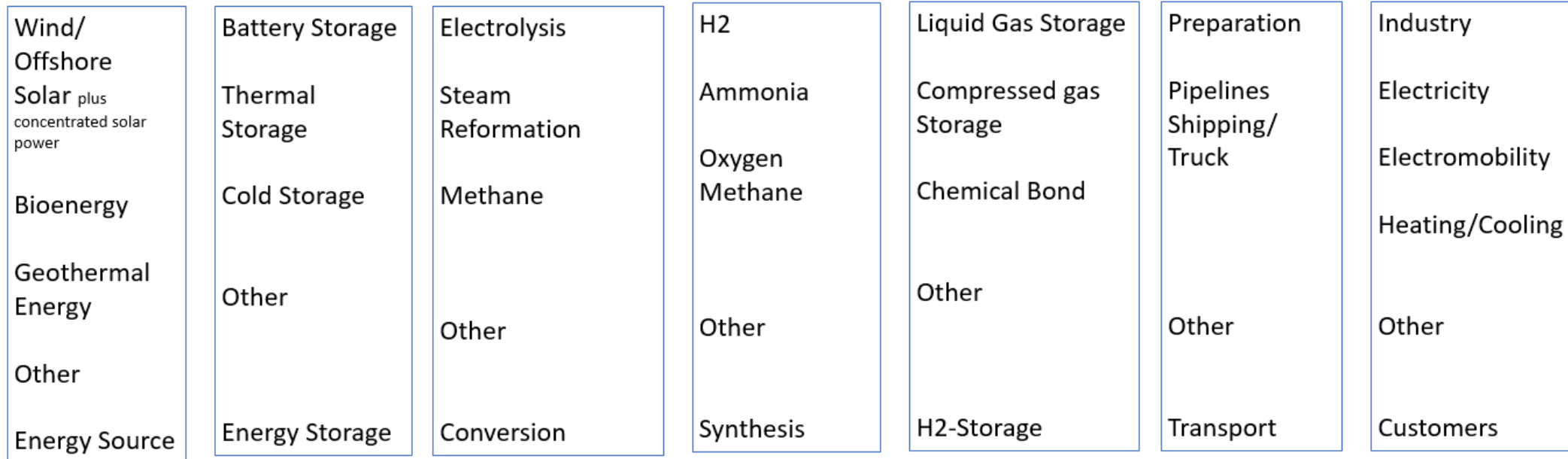


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## IV. Structural mechanisms and governance

### b. Research approaches – foresight

# Supply Chain in H2



## IV. Structural mechanisms and governance

### b. Research approaches – foresight

Assess changing **skills requirements** and **qualification gaps** in skilled occupations along the hydrogen value chain

#### Short-term

First qualification curriculum (72 hours) developed by provider and timely reaction to qualification needs of an evolving market; Basic knowledge of the subject

#### Midterm-/Long-term

Integration in higher vocational training (Master VET)

Qualification along the whole supply chain with alternative energy source

Module 1 – economic/ecologic basic knowledge    Module 2 – properties of H<sub>2</sub>

Module 3 – Production of H<sub>2</sub>    Module 4 – H<sub>2</sub> Technology

Module 5 – Storage and Transport    Module 6 – Environmental protection and labour security

Module 7 – legislation and regulation

## Summary

### Facing the challenges - decarbonization, digitalization and demography

#### I. The dimensions of sustainability are - ecological, economic, social and cultural

- Objectively meaningful (me)
- Socially responsible (we)
- Factually sustainable (it)

#### II. General education - environmental education and permeability of the vocational training system

- Penetration of the entire formal education sector contributes to sustained awareness

#### III. Pathways to sustainable education and training

School as a place of learning - bottom-up approach - teaching/learning group - School Supervision/inspection Ministries, subordinate authorities, universities, study seminars, state institutes, colleges, universities

Learning location company - intrinsic motivation of the management together with training

- Qualification of vocational training personnel, teaching by full-time and part-time training personnel of relevant occupation-specific and cross-occupation sustainability competencies and relevant sustainability aspects of company teaching/learning environments
- Qualification of trainees as junior experts for sustainability in the company



## Summary

### Facing the challenges - decarbonization, digitalization and demography

#### IV. Climate-relevant job profiles

- Analysis on the impact of active climate policy to be considered in all professional profiles

#### V. Structural mechanisms and control

- Standard occupational positions - agreement on a minimum framework.
- Research approaches - foresight on the megatrends of digitalization, decarbonization and demography

# Thank you

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