

Ensuring employability through lifelong learning for a clean sustainable economy

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Facing Transitions: Fundamental Principles for Lifelong Learning

Hypothesis:

If the mindset of companies is right, they will also be actively involved in continuous training and certification within the green economy in the framework of lifelong learning.

But how can we get the right mindset?



For a company to be sustainable, it is not enough to have a sustainability strategy, but the understanding and commitment of all workers at all levels is needed.

Lifelong learning

- Willingness and opportunity to acquire new qualifications on a lifelong basis
 - Guarantee employability and competitiveness.
 - Opportunity to equip oneself with the right skills and competencies through retraining
 - Systematic *upskilling* to be future-proof.
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- ❑ The goal for society is to have **competent (technical) personnel with the right qualifications**
 - ❑ Especially in the context of a **low-carbon economy** for green and sustainable growth.



How is continuing vocational training carried out in the company?

Formal

- ▶ Specific programmes to support technical and professional development within the state education system
- ▶ Training as a master craftsman, technician and professional baccalaureate
- ▶ Courses in the context of retraining

Non-formal

- ▶ Offering training outside the formal curriculum to support personal and social education
- ▶ Short-term classes and courses such as lectures, seminars, workshops, training courses, instruction

Informal

- ▶ Throughout our lives as a result of influences and sources from our own environment and our daily experiences
- ▶ Everyday work, co-workers
- ▶ Private contacts, media, reading specialized literature, etc.

From a business point of view

In addition to the knowledge and skills already taught today about sustainability in **dual training (VET) and universities**, additional "**green competences**" are needed and need to be developed.

In this way, the employees themselves will be in a position to make their **company sustainable step by step – at all levels!**



Green Skills Action Areas (Industry Perspective)

Skills need to be improved in all areas of action and at all levels.

- Management
- Location
- Value creation
- Product
- Customer

Define and strengthen sustainability as a **mindset**!

Basis for vocational training and continuing training activities

From a business point of view

Question to ask:

What can we do even better and more sustainably?

How can we develop competitive and sustainable solutions with the help of our workers?

Learning paths are a method of qualification for both initial and continuing training.

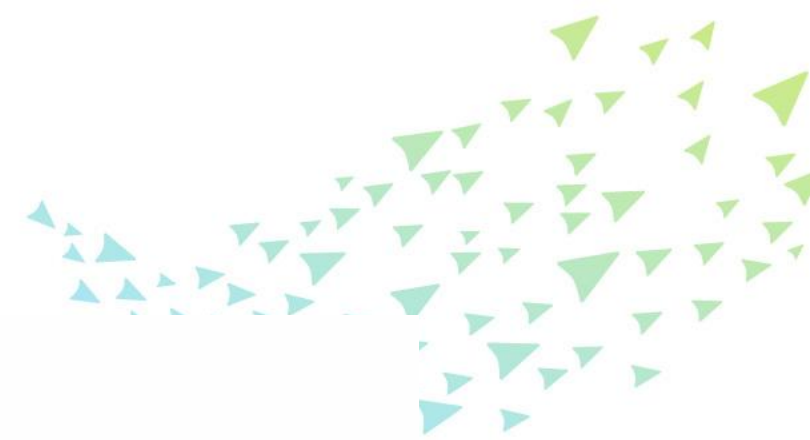
- Paths structured through a series of coordinated tasks that people can complete independently, user-oriented and based on their individual initial situation.
- For a company to be sustainable, it is not enough to have a sustainability strategy, but the understanding and commitment of all workers at all levels is needed.

New trends

The speed of innovation has increased so much that initial training is no longer sufficient in professional life. It must be continuously updated, completed and expanded through **on-the-job and off-the-job learning**.

- By "*green competencies*" we mean a set of skills that empower employees to actively address and shape the dynamic and ongoing transformation of the world of work when it comes to sustainability.
- Therefore, this should be integrated into a **learning path** on the topic of sustainability in the company. The route takes into account the individual context of each learner, but can be adapted to the needs of the company.

The green skills needed in a company



Sustainability Mindset

- Understanding and acceptance of the need to reduce emissions.
- Willingness to change - Ability to adapt.
- Continuous improvement throughout life.



Green Knowledge

- Prepare and evaluate the ecological balance.
- To know the relationships between energy technologies.
- Knowledge of generation technologies of energy.



Transferability Competencies

- Design Thinking (Design Thinking)
- Project Management
- Quality and Operations Management
- Digitalization
- Statistics and data science

Source: Plattform Industrie 4.0

Defining and Anchoring Sustainability as a Mindset

Sustainability Learning Path



WHY

1

Climate change
What do you already know?

2

Reasons for Sustainability
Why?

3

Sustainability Regulations in Companies

Open for Upskilling/Reskilling



WHAT

4

Glossary
Collect new and important terms

5

Sustainable Development Goals of the UN

6

Efficiencies and Interactions

7

Greenhouse Gas Protocol and Life Cycle Analysis



HOW

8

What's on your radar?
What do you have in mind?

9

Feasibility Matrix
What can you do?

10

Concept Poster
Develop your idea!

11

Comment Grid!
Comments on Your idea

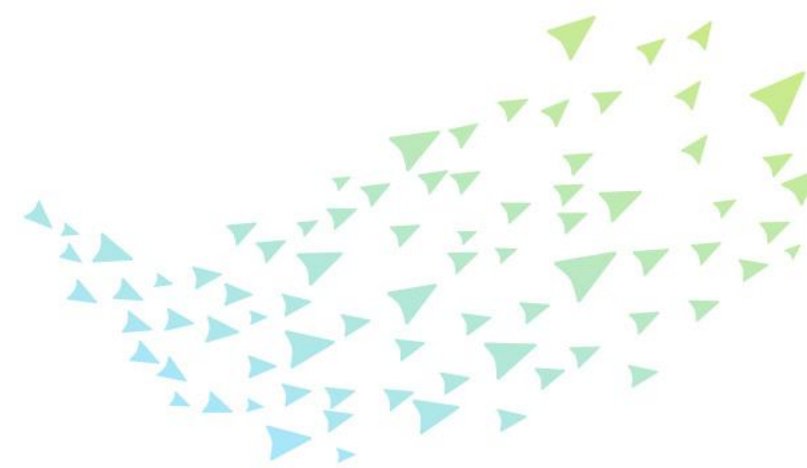
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Give your idea the boost!
Find sponsors

Source: Plattform Industrie 4.0

https://unterrichten.zum.de/wiki/Lernpfad#cite_ref-1

Role of the training company



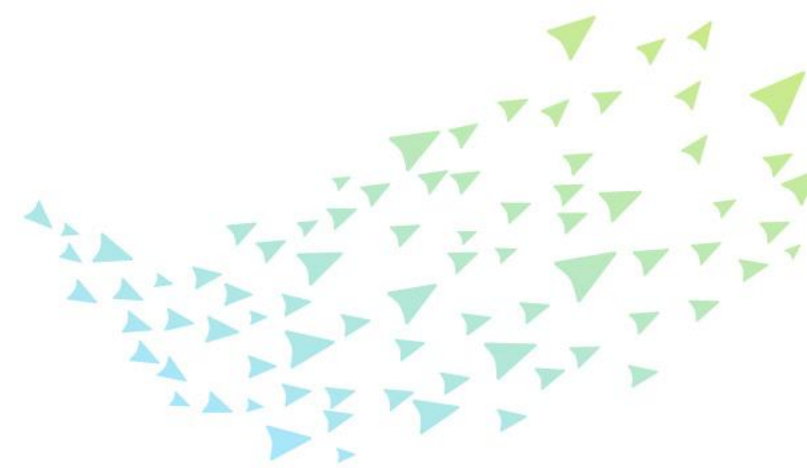
*"The transformation of our companies and workplaces – driven by **digitalisation, decarbonisation and demographics** – requires a massive and sustainable **re-upskilling and upskilling** of our employees. The objective is to ensure and expand the employability of our workers and the competitiveness of our companies."*

Director of Siemens Education, Thomas Leubner

Role of the training company

According to the German Economic Institute (IW Koeln), almost **nine out of ten companies in Germany organize their own in-house training**. Work-based learning and information events predominate. 81.2% of the continuing education hours recorded were completed during working hours. Companies spend an average of €1,347 per employee per year on continuing education (€708 in direct costs; €639 in indirect costs). Extrapolating this to the total expenditure of the economy results in an **annual investment volume of €46.2 billion**.

Source: IW Koeln, Germany 2025



Costs and benefits of continuing professional education



Costs

- ▶ Since both individuals and businesses as well as government and society benefit, **one third of the funding is provided by each of these stakeholders** (mixed financing)
- ▶ **Numerous government funding programmes**, particularly in the area of new technologies.

Benefits to state and society

- ▶ Positive effects on **economic growth, technical advancement and employment**
- ▶ This leads to a rise in tax revenues and a fall in social expenditure
- ▶ Increase in **international economic competitiveness**, including against the background of the **skilled worker shortage**, demographic change and digitalisation.

Participation in continuing education

€ 46.4 bn = total investment
by business in 2022*

of which
€ 24,4 bn
was direct
costs

of which
€ 22 bn
was indirect
costs



Businesses

42% of German companies
participated in continuing
education in 2022

29% of employees
participated in continuing
education measures in 2022

93% of large businesses and
33% of micro businesses
participated in 2022

* <https://www.iwkoeln.de/studien/susanne-seyda-sabine-koehe-finster-thomas-schleiermacher-investitionsvolumen-auf-hoechststand.html>

Participation in continuing education

58% of the adult population (18–64) participated in continuing education in 2022

The participation rate in individual occupationally related continuing education was 8% in 2022



Individuals

48% of the adult population participated in company-based continuing education

Participation rises significantly in line with school-leaving certificate or training qualification

82,511 vocational upskilling qualifications in 2022

* <https://www.iwkoeln.de/studien/susanne-seyda-sabine-koehne-finster-thomas-schleiermacher-investitionsvolumen-auf-hoechststand.html>

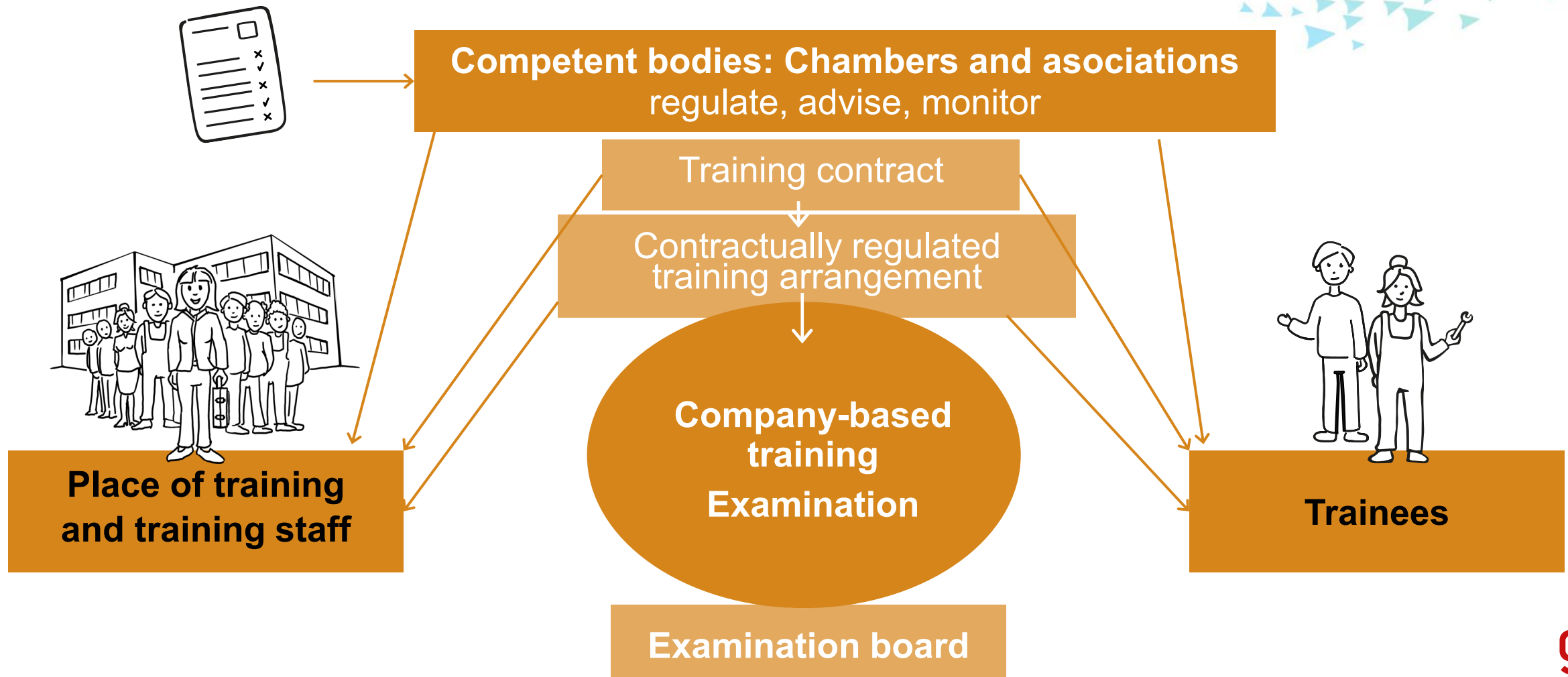
Role of the training company

- Companies and organized industry must focus on **modular certification courses**, reskilling, and multi-level study programs
- Reskilling employees plays a strategic role in lifelong learning to minimize restructuring costs and ensure employability.

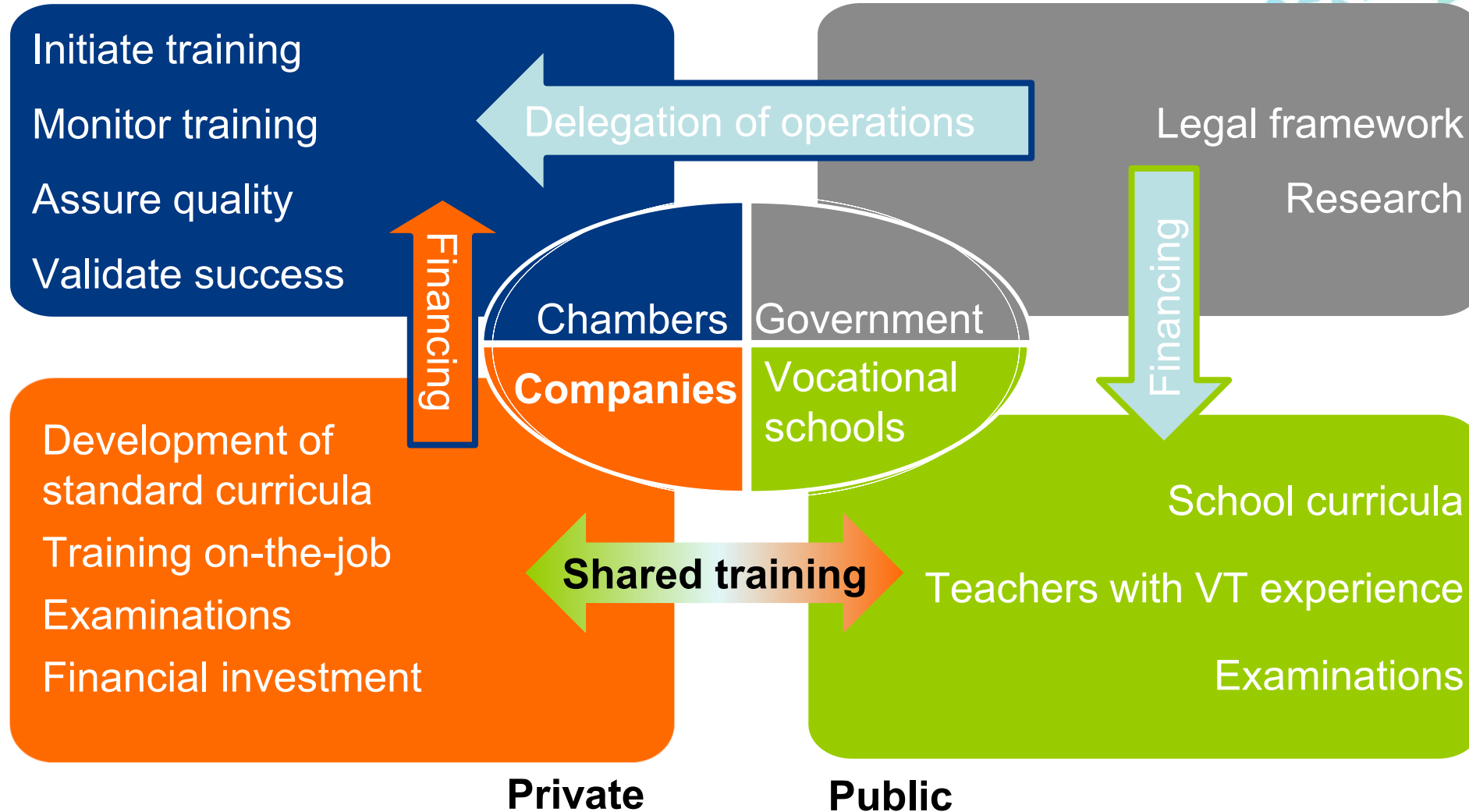
Equip employees across the company with the relevant skills for the future, focusing on digitalization and sustainability; for example, IoT, edge computing, AI, simulation, robotics, and **green skills**.



Ensure private sector participation in the recognition and certification of lifelong learning



Active participation in the recognition and certification of lifelong learning



Example Brazil

TVET for Green Economic Development and Employment II (BMZ)



The context

- The new government of Brazil intends to foster a **green and inclusive economic transition**. There is a huge demand for qualified professionals in the renewable energy sector, the circular economy, bioeconomy and for the digitalisation of the economy. On the other hand large social groups **have few vocational and technical skills, only 9 % youth opt for TVET**.



What we have already achieved

- 75 new demand oriented curricula elaborated
- 1.180 trainers and teachers trained
- 18.708 persons trained of which 72% are employed
- (9,1% women, 10,2% Youth, 12,3% vulnerables)
- Empowering of women: Interligadas (@interligadas_er)
- Cooperation with AHK São Paulo, TÜV and other companies



What we are doing with our partners


- The project advises the Ministry of Education (MEC), Ministry of Labour and Employment (MTE), National Service for Industrial Training (SENAI) and Federal Network of Vocational, Scientific and Technological Education (IF) on developing and implementing needs-based education and training in selected green economic sectors (renewable energies, bioeconomy, circular economy), as well as digital competences. A specific focus is the promotion of women in the energy sector and creating access to TVET for vulnerable groups.



“Programa de Formación Profesional, con Enfoque Dual, y Certificación de Competencias Laborales para el Personal Técnico Operativo de las EPS”

Dotar a las EPS con personal técnico operativo con competencias laborales para el adecuado desempeño de sus funciones.

Formación profesional, con el enfoque dual, de nuevo personal técnico operativo para las EPS.



Certificación de competencias laborales para el personal técnico operativo en servicio en las EPS.

Centros de formación:



PTAP / PTAR



REDES AP / AR

Ente rector:



Empresas formadoras:



MACRO REGIÓN NORTE



MACRO REGIÓN SUR



MACRO REGIÓN CENTRO

Centro certificador:



- PRODUCCIÓN DE AGUA POTABLE
- DISTRIBUCIÓN DE AGUA POTABLE
- RECOLECCIÓN DE AGUA RESIDUAL
- TRATAMIENTO DE AGUA RESIDUAL



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