Indonesia's TVET Reform: Mainstreaming Green Skills for Just Transition

Ministry of National Development Planning/Bappenas Republic of Indonesia

INDONESIA EMAS 2045

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United, Sovereign, Advanced, and Sustainable Nation

Main Targets Vision

1 GNI per Capita of Advanced Nations — **Advanced**

	2025 (baseline)	2045 (Target)
GNI per Capita (USD)	5.500 – 5.520	30.300
GDP Maritime Contribution (%)	8,1	15,0
GDP Manufacture Contribution (%)	20,8	28,0

Source: World Bank (2022); BPS (2022); modified by Bappenas (2023)

2 Poverty and Inequality Reduce — **Advanced**

	2025 (baseline)	2045 (Target)
Poverty Rate (%)	7,0-8,0	0,5-0,5
Gini Ratio (indeks)	0,379-0,382	0,290-0,320
PDRB Contribution of KTI (%)	21,4	28,5

Source: BPS (2022); modified by Bappenas (2023)

3 Leaderships and Power in International Level Increase — **Sovereign**

	2025 (baseline)	2045 (Target)
Global Power Index (rank)	34 (2023)	Top 15

Source: Pareto Economics (2023); modified by Bappenas (2023)

4 Human Resource Competitive Index Inc — **Advanced**

	2025 (baseline)	2045 (Target)
Human Capital (Index)	0,56	0,73

Source: World Bank (2022); modified by Bappenas (2023)

5 Intensity of GHG Emission Decreases towards Net Zero Emission — **Sustainable**

	2025 (baseline)	2045 (Target)
GHG Emission Intensity (%)	38,6	93,5
Environmental Quality Index	76,49	83,0

Source: KLHS (2022); modified by Bappenas (2023)
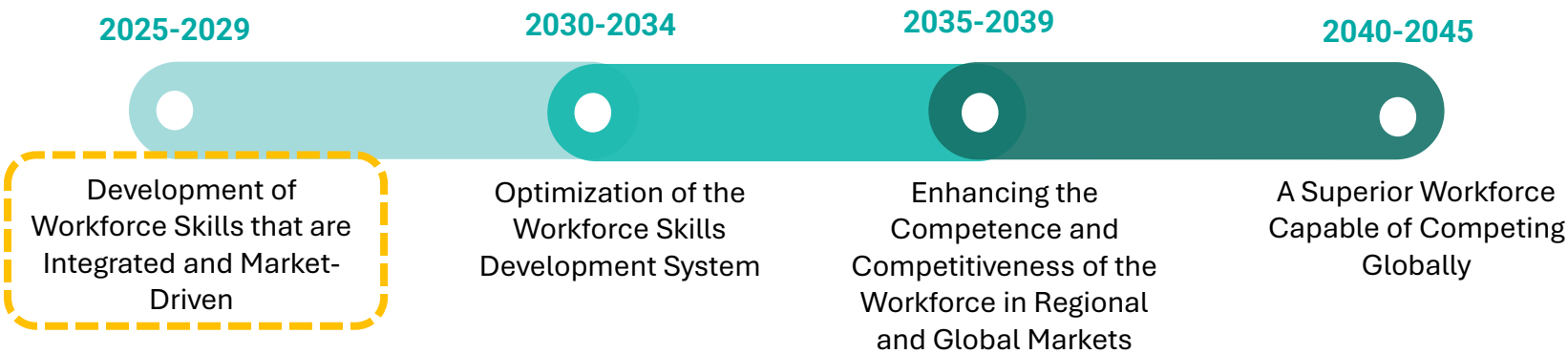
Notes: * | 2025 (baseline) | 2045 (Target)

Science and Technology, Innovation, and Economic Productivity

Labor Productivity

1. Creation of upper-middle-level jobs in productive sectors, including green, blue, and digital jobs for 206.6 million workers.

2. Acceleration of demand-driven vocational education and training implementation through a dual system.

3. Strengthening of re-skilling and up-skilling training, integrating soft skills.

4. Lifelong learning utilizing technology.

5. Adaptive labor protection (social security, labor inspection, and enforcement of workers' rights).

6. Provision of up-to-date labor market information.

7. Strengthening of the employment climate.

8. Productivity-based wage determination.

Indicator	Baseline 2025	Target 2029	Target 2045
Open Unemployment Rate	4,5% - 5,0%	4,0% - 4,71%	3,0% - 4,0%
Female Labor Force Participation Rate	56,30%	56,7%	70,0%
Percentage of Workers with Secondary and Higher Education Employed in Medium- and High-Skilled Occupations	66,78%	67,66%	75,00%
Coverage of Employment Social Security Participation	43,19%	52,6%	85,0%
Percentage of Persons with Disabilities Employed in the Formal Sector	22,0%	28,0%	60,0%

Stages of Employment Policy Direction

2025-2029 — Development of Workforce Skills that are Integrated and Market-Driven

2030-2034 — Optimization of the Workforce Skills Development System

2035-2039 — Enhancing the Competence and Competitiveness of the Workforce in Regional and Global Markets

2040-2045 — A Superior Workforce Capable of Competing Globally

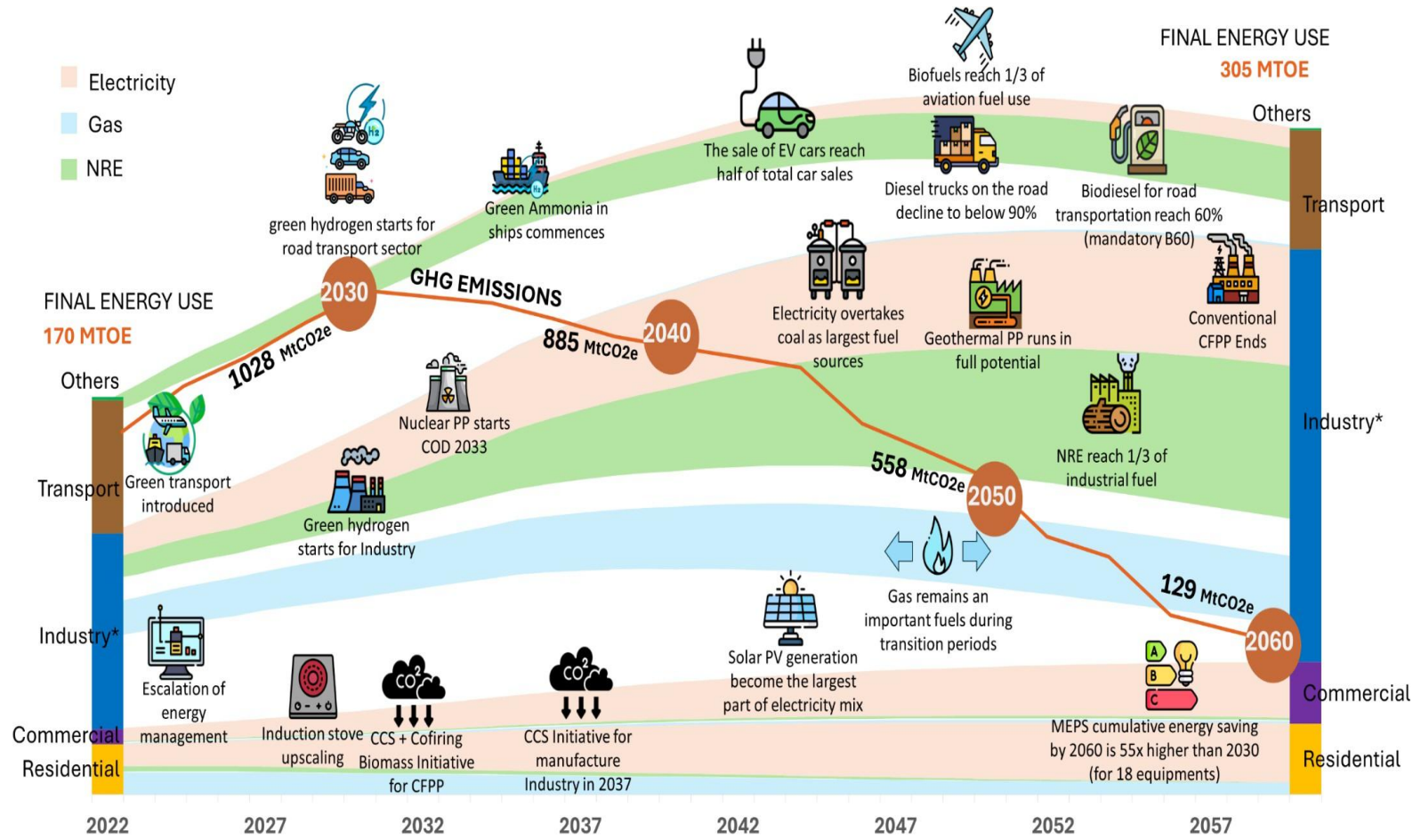### Strategy for Skill Development

| TVET	Internship and Certified Independent Study	Support for Vocational Institutions	PMI Training and Certification	Linkage between Vocational High Schools and Industry

Energy Transition Towards NZE 2060

NZE Strategy

1. **Energy Efficiency**
2. **Electrification**
3. *Phasing down* **PLTU**
4. **NRE Development**
5. **New Energy Resources**
6. **CCS/CCUS**

CO2 Emission Reduction
(Million ton CO2)
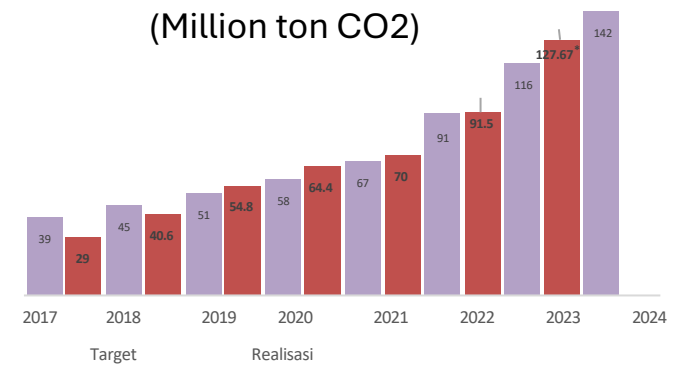
GHG emission reduction from energy sector in 2024 147.61 million ton CO2

Sumber: Draft Net-Zero Emission Indonesia 2060 (EBTKE Ministry of Energy and Mineral Resources, 2024)

*Note: Industrial fuels and feedstock (non-energy use).

4

Green Workforce Roadmap 2025-2029

The Indonesia Green Workforce Development Roadmap focuses on strategic sectors that support Indonesia's commitment to achieve NZE 2060 and the achievement of Indonesia's ENDC targets.

Main Strategy

Build an **ecosystem** that supports the development of green jobs

Improving the **readiness of human resources** to enter the green job market

Strengthen the role of associations and **private sectors** in supporting green job growth.

Action Plan

Phase I	Phase II
2025 – 2029 Strengthening the Foundation and Program Implementation	**2025 – 2029** National-Scale Acceleration and Sectoral Expansion

Phase III	Phase IV
2035 – 2039 Regional and Global Expansion	**2040 – 2045** Sustainability and System Consolidation

Access the Indonesia Green Workforce Development Roadmap Document:
https://www.bappenas.go.id/datapublikasishow?q=Policy%20Paper#

Scope of Sectors

1. Renewable energy
2. Forestry and land use
3. Product manufacturing and processing
4. Waste management and recycling
5. Sustainable agriculture
6. Sustainable transportation
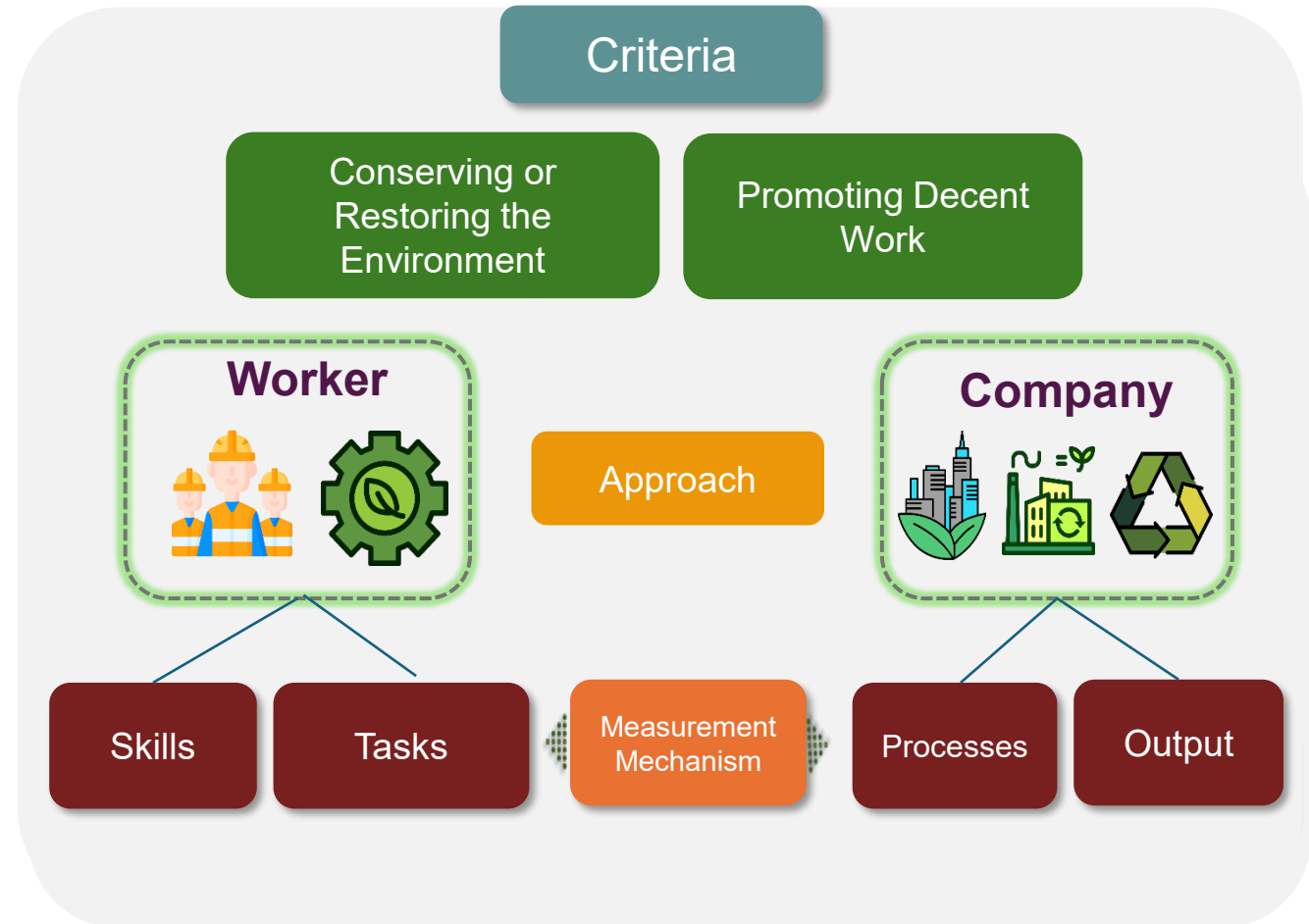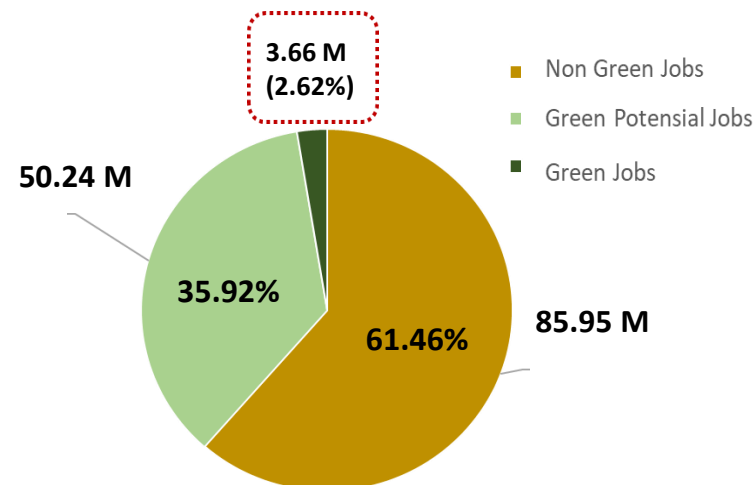7. Sustainable tourism
8. Coastal and marine
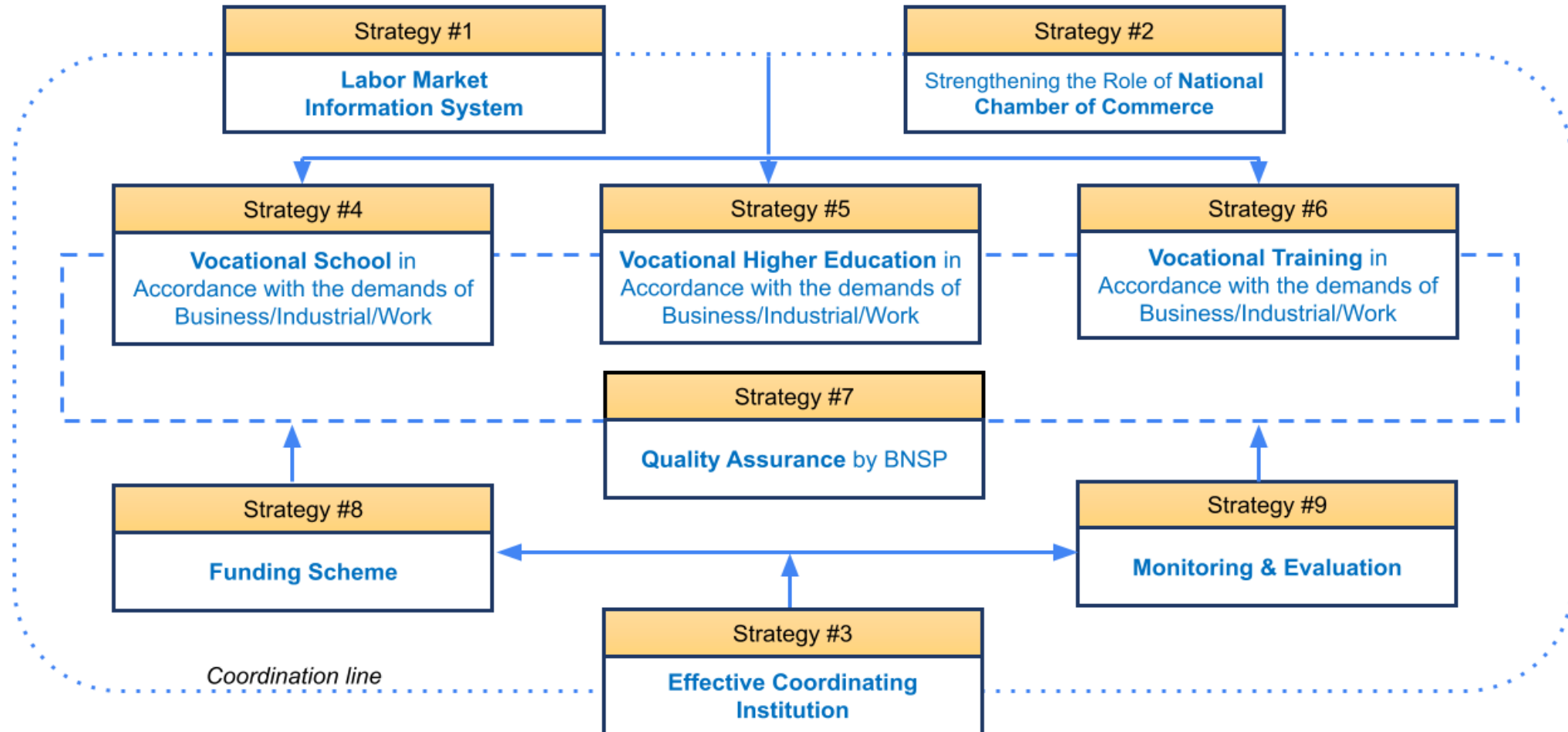
Definition of Green Jobs

The Operational Definition of Green Jobs

Jobs that contribute to preserving or restoring the environment and promoting **decent work**, through one or more of the following mechanisms:

- Have specific **tasks**
- Require specific **skills**
- Implement environmentally friendly **processes**, and/or
- Produce environmentally friendly **outputs** (products/services).

3.66 M (2.62%)

50.24 M

85.95 M

35.92%

61.46%

- Non Green Jobs
- Green Potensial Jobs
- Green Jobs

Criteria

Conserving or Restoring the Environment

Promoting Decent Work

Worker

Approach

Company

Skills | Tasks

Measurement Mechanism

Processes | Output

Indonesia TVET Reform

President Regulation No. 68/2022
National Strategy of TVET Reform

Strategy #1
Labor Market Information System

Strategy #2
Strengthening the Role of National Chamber of Commerce

Strategy #4
Vocational School in Accordance with the demands of Business/Industrial/Work

Strategy #5
Vocational Higher Education in Accordance with the demands of Business/Industrial/Work

Strategy #6
Vocational Training in Accordance with the demands of Business/Industrial/Work

Strategy #7
Quality Assurance by BNSP

Strategy #8
Funding Scheme

Strategy #9
Monitoring & Evaluation

Strategy #3
Effective Coordinating Institution

Coordination line

BNSP = Agency of National Profession Certification

Developing Green Workforce Competencies to Advance Greening TVET Ecosystem

Indonesia's Labor Landscape

143.72 million labor force

Source : Sakernas BPS, August 2024

RPJMN 2025-2029 target: reduce unemployment to 4.5%

By 2030, 40% of jobs will be new, many linked to green transformations

Urgency for Green Transition

60% of training graduates still require reskilling/upskilling

Relevance of TVET Reform for the Green Economy

TVET reform **enhances employability** and plays a critical role in **preparing a workforce ready for green transitions**.

TVET: Key Principles

Industry-aligned, green skills integration across curricula and training standards, competency-based lifelong learning tailored for sustainability sectors

TVET Paradigm shift

Supply oriented → **Demand driven**

Green TVET Implementation

National TVET Coordination Team **(TKNV)**

Provincial TVET Coordination Team **(TKDV)**

Source: Presidential Regulation No. 68/2022 on TVET Revitalization

Triple Skilling Concept for Green Workforce

Skilling → Jobseekers/ Fresh grads → Entry into emerging green sectors

Outcome → Reduce unemployment

Upskilling → Active workers → Enhance green productivity & eco-innovation

Outcome → Improve competitiveness

Reskilling → Laid-off/ vulnerable workers → Transition into green roles or eco-preneurship

Outcome → Reducing open unemployment

The Key to Green Jobs Development:
Pentahelix Collaboration

GOVERNMENT
- **Public dialogue and cross-sector collaboration for green jobs**.
- Policy and institutional synergy to ensure the implementation of a green economy.
- Policy incentives for green jobs creation.
- Green competency and expertise-based training, re-skilling, and up-skilling.

MEDIA
- Promotion of green job development activities.
- A means for campaigning to increase public awareness of green jobs.

ACADEMIA
- Research and development on the green jobs sector.
- Green jobs-based education curriculum.
- Collaborate with private sectors to harmonize the education curriculum based on the needs of industries.

1 Government
2 Private Sector
3 Public
4 Academia
5 Media

PRIVATE SECTOR
- Development of green productivity business models and practices.
- Internships and in-house training in green skills.
- Investment in green business sectors that drive green job creation.

PUBLIC
- Participation, involvement, and support in the green jobs sector.
- Increasing community awareness of the importance of green jobs.