



# SUSTAINABILITY CENTER UNIVERSITAS PERTAMINA

*Creating Transformation & Impact*



## CONTACT

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Sustainability  
Center

SUSTAINABLE  
DEVELOPMENT  
GOALS

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# Tim Penyusun



## Pengarah

Prof. Dr. techn. Djoko Triyono  
(Wakil Rektor Bidang Penelitian, Pengembangan, dan Kerja Sama)

## Penyusun

Gede Widia Pratama Adhyaksa, Ph.D.  
Rima Shallu Zevita, S.T.  
Ayu Shimma Dyanna Mahardika An-Nuuru, S.T.  
Afdal Huda, S.T.  
Rahma Audia Pertiwi, S.T.  
Ade Cahyaning Palupi, S.Kom.  
Intan Puspita Sari, S.Si.

Diterbitkan oleh:

**Sustainability Center Universitas Pertamina**

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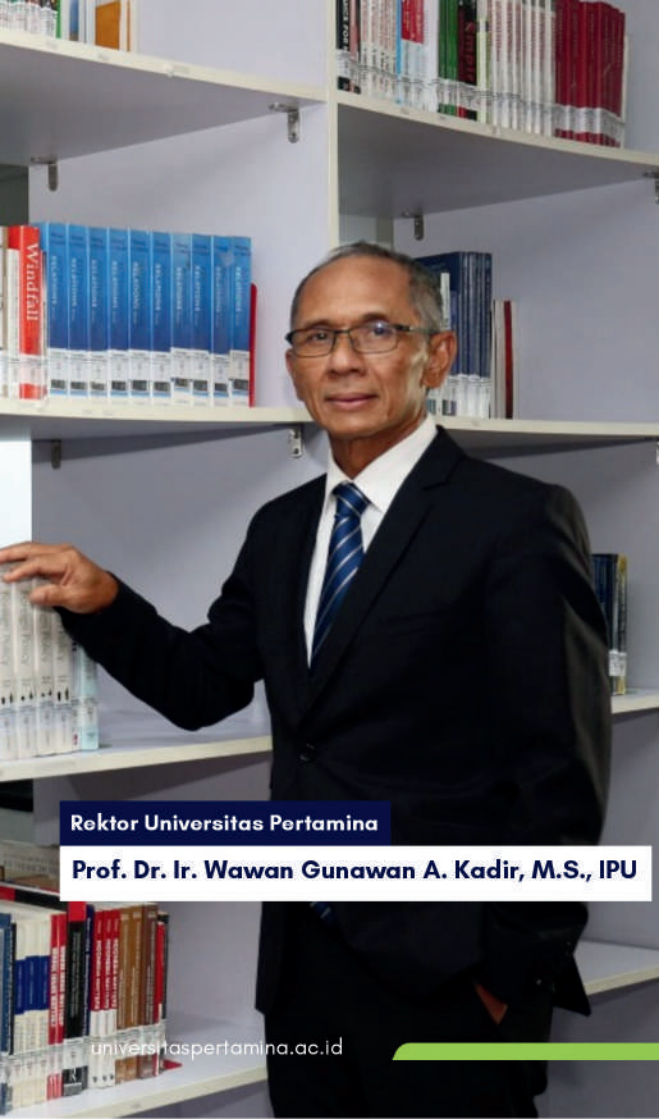
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Our Partners





# INTRODUCTION



**Rektor Universitas Pertamina**

**Prof. Dr. Ir. Wawan Gunawan A. Kadir, M.S., IPU**

[universitaspertamina.ac.id](http://universitaspertamina.ac.id)

# Welcome to Sustainability Center

Sustainability Center of Universitas Pertamina was built to support the achievement of Net Zero Emission (NZE) in 2060 by focuses on research, development, and implementation of sustainable practices, policies, and technologies.

## Our Vision

To become a center for knowledge development and the application of sustainability best practices that contribute to global solutions

## Our Mission

Developing strategies to become a national center of excellence in the field of sustainability

Fostering collaboration and program synergy with national and international institutions to support sustainability programs

Developing education, research and innovation, and community service programs in the field of sustainability



# History



Since establishment in 2016, UPer has been directing its education, research and community service activities toward sustainability (Leading Technology and Business University) and this is aligned with the sustainability agenda initiated by Pertamina and Indonesian Government.

Consolidation is required to strengthening university impact in education, research, and community services in sustainability.

As well as, improving university governance, accountability, global ranking, and collaboration by convening leading industry & govt. experts and academia.



**Pertamina Sustainability Center**  
(31 Juli 2023)



**Memorandum of Agreement in Sustainability**  
**between Universitas Pertamina - BAPPENAS**  
(10 Juni 2024)



## PERTAMINA SUSTAINABILITY ACADEMY



**The launch of Pertamina Sustainability Academy**  
(8 September 2023)

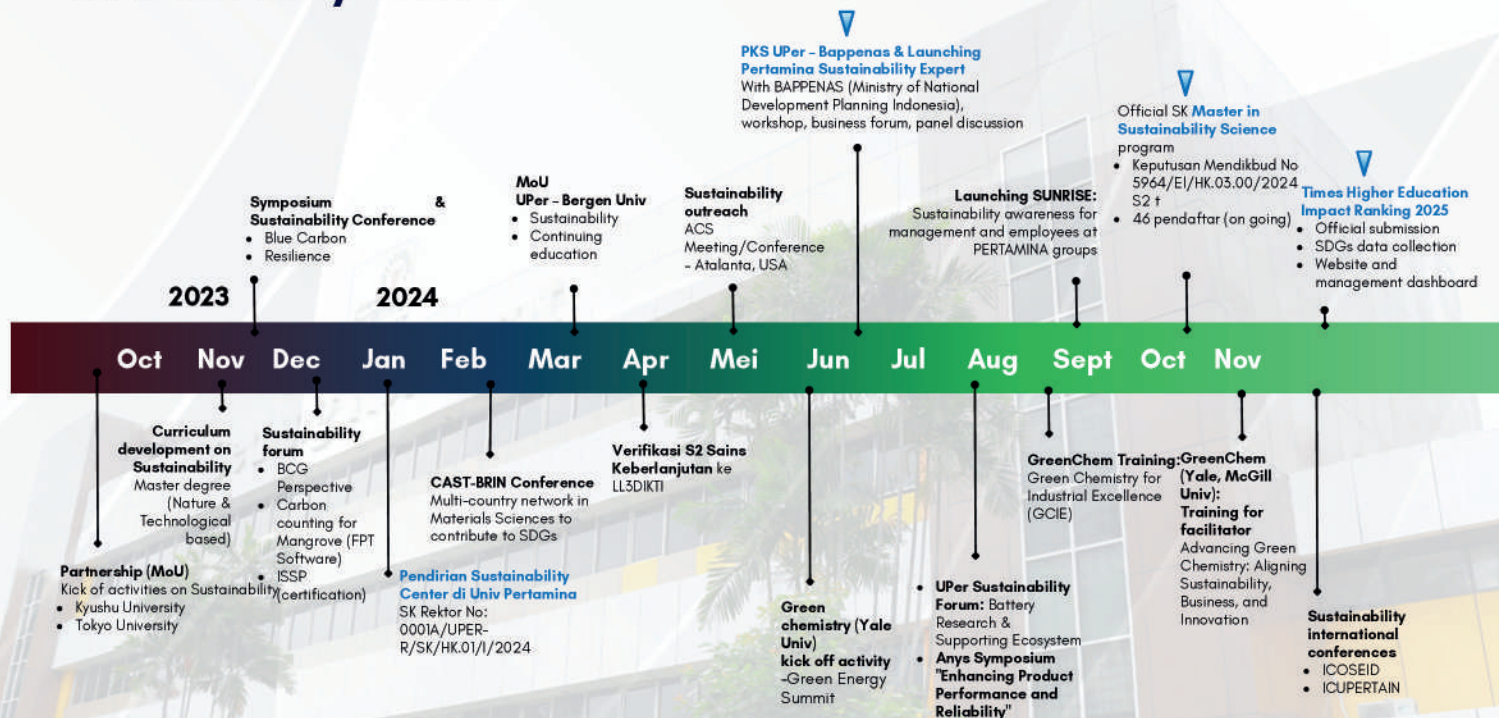


**Pertamina Sustainability Energy Center at IKN**  
(22 September 2023)



# Key Milestones 2024

## Sustainability Center



# Governance at Sustainability Center



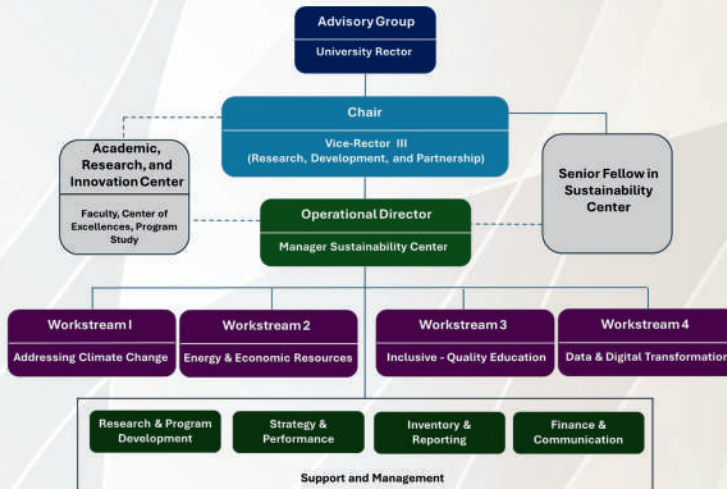
Sustainability Center at UPer governance model was established in 2025  
(SK Rektor 3/UPER-R /PER/HK.00/I/2025)

The model facilitates high-level informed oversight by incorporating the relevant portfolio stakeholders. Under this governance structure, the Vice Rector III assumes a pivotal role, providing high-level governance and strategic counsel the Operational Director (currently served by Manager Sustainability Center) regarding the progress and implementation of sustainability targets.

The current targets have four workstreams focusing on:

1. Addressing climate change
2. Energy & Economic resources
3. Inclusive - Quality Education
4. Data & Digital Transformation

Each workstream aims to incubate into mature centers of excellence or institutes. Senior Fellows, along with Center of Excellence members and Faculty, oversee target achievement, make decisions, and allocate resources. They are supported by management and supporting teams and subject matter expert communities.



# UPER provides an excellent ecosystem support for Sustainability Center

Degree and Non-degree Program in Sustainability



Expert Pool & Sustainability Initiatives



Think tank hub



Commercialization of expertise



## Leadership team



**Prof. Wawan Gunawan A. Kadir**  
Advisory & Rector 30+ years of experience, leader for Indonesia education, decarbonization, CCS



**Prof. Djoko Triyono**  
Head of Sustainability Center 20+ years of experience, Indonesia leader for research & innovation strategy



**Dr. Gede Adhyaksa**  
Manager of Sustainability Center 10+ years of experience for renewable energy, photovoltaics, and sustainability

## Senior Fellow

SC National expert on sustainability



SC global expert on sustainability



**Nicke Widiyati**  
Sustainability Strategy



**Prof. Atle Rotevatn**  
Univ. Bergen (NO), Energy Transition



**Dr. Retno Gumilang**  
NZE, ESG Roadmap



**Prof. Yasuhiro Yamada**  
Univ. Kyushu (JP), Geothermal

## Center of Excellence (CoE) within UPer

### ESG: Rating, Strategy, Performance



**Satrio Prakoso, M.Eng.**  
Head of ISSP  
ESG Rating



**Harya D. Nugraha, Ph.D.**  
ESG Strategy



**Dr. Farah Mulyasari**  
ESG Performance & Community Engagement

### Low Carbon Technology Pathways



**Agus Abdullah, Ph.D.**  
Geoscience AI



**Dr. Sri Hastuty**  
Structure Reliability & Process Safety



**Dr. Mega Mutiara Sari**  
Life-Cycle Assessment & Sustainability



**Dr. Nova Ulhasanah**  
Water Resources & Environmental Solution



**Eduardus N, Ph.D.**  
Downstream Chemical Industry



**Ade Irawan, Ph.D.**  
Digital Transformation

## Knowledge Partner



### Geopolitics & Diplomacy



**Dr. Ian Monratama**  
ASEAN Energy Research

### Sustainable Financing



**Dr. Rinto Pudyantoro**  
Business and Economics for Petroleum Energy

### Business Model



**Dr. Suhari Pranyoto**  
Digital Business & Technology



# Meet our Supporting Team



Supporting team help Sustainability Center to develop program, data inventory, and track progress against our sustainability targets and aligned with University Pertamina agenda

**Afdal Huda**

Inventory and Reporting

**Rima Shallu**

Program Development

**Shimma Dyanna**

Strategy and Performance

**Ade Cahyaning**

Data Intelligent

**Rahma Audia**

Partnership

**Intan Puspita Sari**

Finance and Administration

**Nadhif Naufal Athami**

Disability Intern

# Senior Fellow in Sustainability Center



**Nicke Widyawati**  
Sustainability Strategy



**Dr. Ir. Budi Santoso Syarif**  
ESG Rating & Green Building



**Dr. Ir. Retno Gumilang Dewi**  
Decarbonization and NZE



**Prof. Atle Rotevatn**  
Sustainable Geoscience and CCS



**Prof. Yasuhiro Yamada**  
Geothermal Energy



**Dr. Didik Sasono Setyadi**  
Energy Transition Policy



**Budiarto Tedja, Ph.D.**  
Community Resilience and Disaster Planning



**Dr. Ir. Saleh Abdurrahman**  
Natural resources and environmental management



**Ir. Ahmad S. Yuniarto**  
Foresight dan Scenario Planning



**Dr. Ir. Djoko Siswanto**  
MBA  
Oil & Gas Management



**Adriansyah, Ph.D.**  
City Planning and Transportation



**Dr. Ir. Tri Ligayanti**  
Green Industry and Circular Economy



**Dr. Widhyawan Prawiraatmadja**  
Energy & Economics



**Prof. Chun Hung Lee**  
Waste Management and Adaptive Capacity



**Prof. Ir. Harkunti Pertiwi Rahayu**  
Community Resilience and Disaster Planning



**Prof. Ir. Tutuka Ariadji**  
Upstream Innovation



**Prof. Dr. Jatna Supriatna**  
Biodiversity Conservation



**Prof. Dr. Dwi Soetjipto**  
Energy Security



**Satrio Prakoso, M.Eng.**  
ESG Rating and Green Building



**Montty Girianna, Ph.D.**  
City Planning and Transportation



# Roadmap

Aligning university agenda, driving sustainability impact, Innovation across disciplines, initiatives driving policy and solution across the university and beyond



Submitted in Nov 2024



2028 - 2035



After 2035



UPer's journey toward sustainability center of excellence

Impact Value

- **Master Program Streams:** green technology & nature-based solution, and Risk & Sustainability Finance
- **Best-in-class sustainability curriculum** covering wide-range of topics including energy transition, decarbonization, new green business, and ESG reporting

Degree and Non-degree Program in Sustainability



- Center for collaboration among **Pentahelix:** Academia, Government, Business, Community, and Media

- Strengthening **operating system and governance** of the Sustainability Center
- Contribute to **Global University Recognition** in Sustainability

Sustainability Fellow & Initiatives



Teaching Univ.

Research Univ.

Exploration of partnership with leading institutions



- **Awareness raising** among strategic stakeholders
- Sustainability inclusion **network**
- **Sustainability Accelerator**
- **MRV** on sustainability initiatives
- Reorienting **research and innovation**

Entrepreneurial Univ.

Commercialization of expertise



- **Capacity building** through training & workshops, field-work, Masterclasses, research, industrial projects, and low carbon business reporting
- **Consultancy** within Pertamina ecosystem & beyond
- **Pilot project and implementation**

Campus Community

Education

Expert Pool

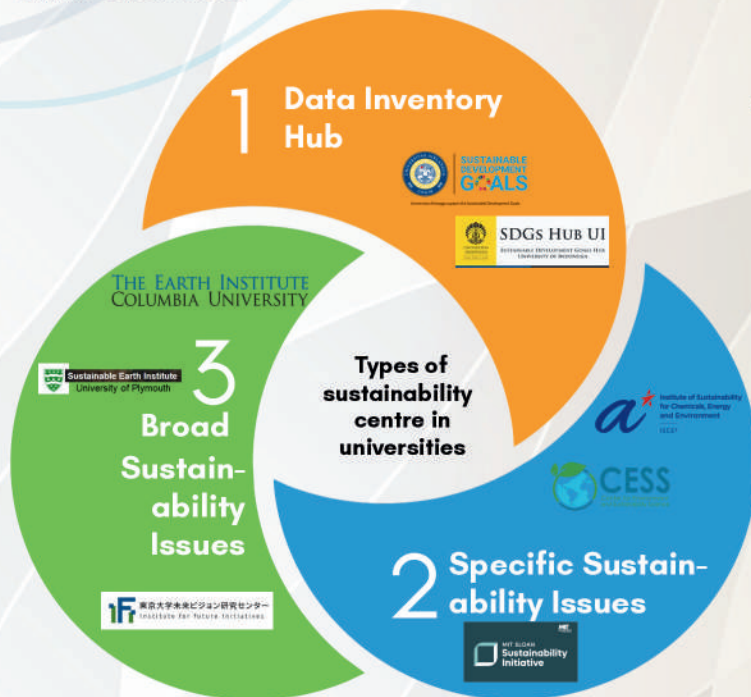
Think-Tank Hub

Center of Excellence

Maturity



# Sustainability Center at UPER is a combination of the three types of sustainability center in universities



**Sustainability Center** is a part of Pertamina to be a leader in **driving sustainability agenda** across Indonesia and ASEAN by building next generation of sustainability leaders **beyond Pertamina Group** and convening leading industry knowledge experts and academia.

**UPER's Sustainability Center is a combination of the three types of sustainability center**

## **Data Inventory Hub**

A center that mainly document sustainability efforts and provide recommendations for future improvements, usually uses SDGs as the main framework.

## **Specific Sustainability Issues**

A center that mainly focuses its research on specific sustainability issues.

## **Broad Sustainability Issues**

A center that spans its interest on integrating university's education, research, and community development on multidisciplinary sustainability issues.

# The sustainability center is powered by CoEs, faculties, and experts to deliver five key programs

**Center of Excellence**  
(CoE) at UPER

**Faculties** for experts  
at UPER that is not  
associated  
in any CoEs

**Expert Pool**  
(Pertamina,  
Government,  
Universities, NGOs,  
Professionals,  
International Experts)



## Degree & Non-Degree (Certification) Programs

Develop degree (masters) programs on sustainability and non-degree (digital courses)

## Sustainability-related projects

Scout and document sustainability-related projects conducted by UPER's CoE or faculties, including education/training, research, and industrial projects

## National & Global Networks

Expand and maintain national and global networks to support sustainability center's activities

## Sustainability Inventory and Reporting

Document current sustainability efforts and provide recommendations for future improvements

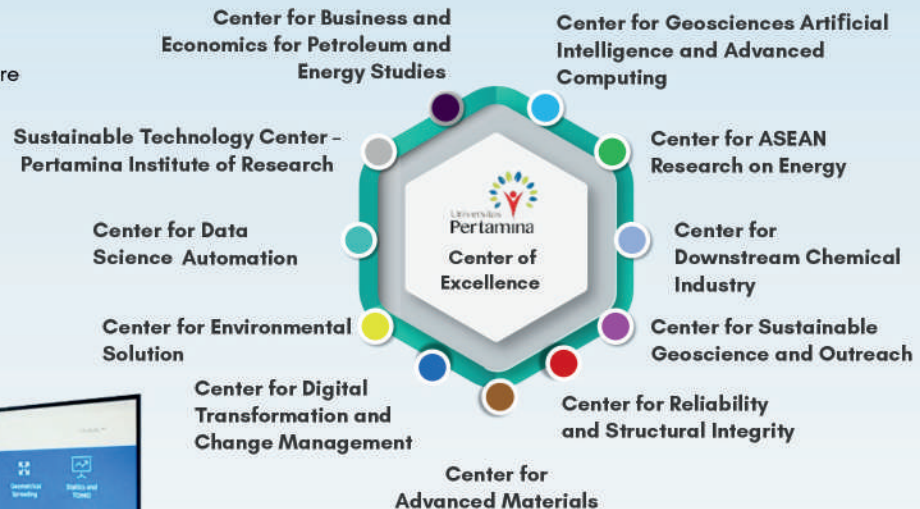
## Sustainability Academy Collaboration

Curriculum development, improvement and enrichment

# UPER has 11 Center of Excellences (CoEs) whose activities can be mapped to sustainability efforts (e.g. SDGs)

These CoEs contribute to sustainability through **education**, **commercial and academic research**, and **community services**. Many activities of these CoEs are related

to **sustainability**, representing that the awareness of sustainability issues have been embedded to UPER's education and research





# Expertise of UPER's CoEs

## Ranges encompasses technology- and nature-based solutions as well as social aspects for sustainability

GAIA focuses on its expertise on utilizing **advanced computing** for **oil and gas**, and **exploration geothermal exploration field development**. A total of active project value of **USD ~1 Million**

### Portfolios (examples):

- Clirton seismic processing software - Pertamina URTI Pertaray software
- development - URTI & PGE Tunu shallow zone machine learning - PHM

### Center for Geosciences Artificial Intelligence and Advanced Computing (GAIA)

Agus Abdullah, PhD  
Head



### Center for ASEAN Research on Energy (CARE)

Dr. Ian Montratama  
Head

CSGO highlights the importance of **geoscience for sustainability** through education, research, and outreach. The expertise includes **hydro- and contaminant geology, geotechnics, minerals, energy (incl. subsurface storage), geohazards, and outreach & policy making**. A total of **USD ~300.000** project value has been achieved.

### Portfolios (examples):

- Critical minerals governance - EITI
- Sumba Prospectivity - PHE Public
- Engagement for CCS/CCUS - IEAGHG

### Center for Sustainable Geoscience

Harya Dwi Nugraha, PhD (DIC)  
Head



CARE's scope includes **Global Energy Politics Analysis, Sustainable Development Works, and Trainings**. A total of **USD ~70.000** project value has been gained.

### Portfolios (examples):

- Review bauran energi Indonesia 2021-2022 Pertamina Sustainability
- Journey (ESG Pertamina)- Pertamina Comparative index political risk for energy investment



### Center for Digital Transformation and Change Management (DTCM)

Dr. Dewi Hanggraeni, S.E., MBA,  
Head

DTCM focuses its expertise on **organizational change and transformation risk management**, **human capital management strategic and business management**. A total of project value **USD 210.000**.

### Portfolios (examples):

- Learning culture - Pertamina Group
- Reformulation of business process and job analysis - KPI Feasibility study of seaport development - Indonesia Ferry

# Expertise of UPER's CoEs

## Ranges encompasses technology- and nature-based solutions as well as social aspects for sustainability

CVISION's expertise includes (i) **water health, technology innovation and safety, environment management climate, air quality and solid waste management**, and (iv) **environmental-based multidisciplinary research**. A total project value of USD 250.000. **Portfolios (examples):**

- Design of sustainable smart system of solid waste management in Universitas Pertamina Blue Carbon Initiative – PF

**Center for Environmental Solution**  
Dr.Eng. Nova Ullhasanah  
Head



**Materials X**  
**Center for Advanced Materials-X**  
Gede Adhyaksa, PhD Head

Materials-X focuses on **energy materials, material circularity, nano materials**, and **materials informatics**. A total project value of USD 260.000 has been achieved.

**Portfolios (examples):**

- Solar PV design and implementation – PPI Automatic cleaning system for photovoltaics – PPI & Pertamina Ventura

RESTRIN's expertise are **asset integrity management, risk-based inspection, corrosion of materials, material selection, failure analysis, computational solid mechanics**. **Portfolios (examples):**

- Produksi Hidrogen Nol Karbon Menggunakan Kogenerasi HTGR 40 Mw thermal – BRIN Studi dan Mitigasi
- Penggunaan B40 pada Kendaraan Teknologi Euro 4 di Indonesia – BPDPKS

**Center for Reliability and Structural Integrity (RESTRIN)**  
Dr.Eng. Sri Hastuty  
Head



**Center for Downstream Chemical Industry**  
Eduardus Budi Nursanto, PhD  
Head

CDCI's expertise includes (i) **development and synthesis of high value, downstream chemicals**, and (ii) **process design, process optimization, and process safety related to downstream chemicals**. **Portfolios (examples):**

- Synthesis of EOR Polymer Surfactant from Lignocellulosic Electrocatalyst for
- CO2 electro-reduction



# Expertise of UPER's CoEs

## Ranges encompasses technology- and nature-based solutions as well as social aspects for sustainability

CDSCAN aims to support business and solve problems in society by developing an end-to-end automated system that streamlines data processes, enhances efficiency, and facilitates informed decision-making. **Portfolios (examples):**

- Pengembangan Model Komunikasi Semantik yang Memanfaatkan Korelasi Data untuk Mendukung Teknologi 5G dan Seterusnya
- Towards An Autonomous System of Intelligent Asset Integrity

**Center for Data  
Science Automation**  
Irawan, Ph.D.  
Head



**Center for Business and Economics  
for Petroleum and Energy Studies  
(C-BEPES)** Dr. Rinto Pudyantoro, S.E.,  
M.M., CA., AK  
Head

CBEPEs coordinates research and conducts its own research on fossil energy and studies related to energy transition issues, including **environmental economics and climate change energy business energy trade institutional economy, regional economy and public policy behaviour economics**.

**Portfolios (examples):**

- Study kebijakan harga gas industri tertentu – SKK Migas Study multiplier effect Pembangunan
- Industry – PT Polyrama Propindo.

STC-PAIR's expertise are **energy-based technology innovation, computational-inspired interdisciplinary research, and global energy strategy**. **Portfolios (examples):**

- Plastic emissions in the Ocean – JSPS-DIKTIRistik
- CO2 capture technology
- Pemanfaatan limbah plastic menjadi bahan bakar dengan teknologi pirolisis – DIKTI

**Sustainable Technology Center –  
Pertamina Institute of Research**  
Dr.Eng. Mega Mutiara  
Sari Head





# HOW DO WE CONTRIBUTE TO SDGs





## What is THE Impact Ranking?

Times Higher Education (THE) Impact Ranking is a global ranking program in the field of sustainability that assesses universities' performance in supporting the Sustainable Development Goals (SDGs).



## Why and how to participate

THE Impact Ranking is a voluntary action. By participating, Universitas Pertamina will gain global recognition in sustainability and showcase our commitment in sustainability.



If you want to participate and make impact in sustainability, you can contact us at [sustainabilitycenter@universitaspertamina.ac.id](mailto:sustainabilitycenter@universitaspertamina.ac.id)



## In what areas THE Impact Ranking works?

### Research

University might help deliver the SDGs is by creating research in relevant topics.

### Teaching

University ensure that there are enough skilled practitioners to deliver on the SDGs

### Outreach

University work with their local, regional, national and international communities

### Stewardship

How University act as stewards is one of the key factors in delivering the SDGs.



Times Higher Education  
Impact Rankings 2025

Excelling In Energy Technology and Business,  
Universitas Pertamina

**Ranked 4th**

Best University In Indonesia

**Global Rank :  
800+**

## Top 4 SDGs of Universitas Pertamina





# SUSTAINABILITY TRAINING

Sustainability Center Universitas Pertamina



A training program developed by the Sustainability Center Universitas Pertamina as part of Continuing Education. Supported by competencies of sustainability professionals through practical and impactful learning and sustainable energy learning environment



**SUSTAINABILITY PROFESSIONALS**



**ENERGY BUSINESS AND TECHNOLOGY UNIVERSITY**

A method or approach used to assess the environmental impact caused by a product or activity.

Energy management in a building, system, or process to identify opportunities for efficiency and energy savings.

Techniques for analyzing, interpreting, and visualizing data to discover patterns, trends, and insights to support better decision-making.

A method for measuring and quantifying carbon emissions, enabling actions to reduce emissions and assess potential for carbon credits.

An introduction to the concept of sustainability, which encompasses environmental, social, and economic aspects to support sustainable development.

**LIFE CYCLE ASSESMENT**

**ENERGY AUDIT**

**DATA ANALYTICS**

**CARBON COUNTING**

**SUSTAINABILITY 101**



# Introducing **SMART**

SDG Mapping and Assessment for Research and Tracking





## WHAT IS SMART?

A research tool to map academic papers to the **17 Sustainable Development Goals (SDGs)**.

## WHY USE SMART?

Align your research with global goals  
Track institutional SDG contributions  
Enhance visibility & impact

## Key Features:

-  Upload your research
-  Abstract extraction & SDG classification
-  Powered by Aurora SDG multi-label mBERT model
-  No document is stored or shared



Try it now: <https://super.universitaspertamina.ac.id/index.php/smart/>





# Output SMART

SDG Mapping and Assessment for Research and Tracking

## Quick report

Track your research  
work against SDGs

Summary Classification SDG

SDG Goals & Jumlah Paper

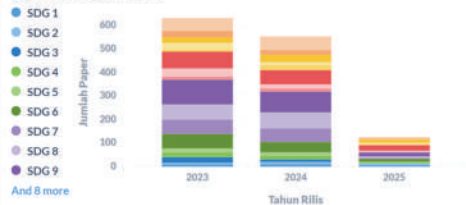


SMART is powered by the *Aurora SDGs multilingual AI model* built to analyze academic papers and classify them according to the 17 Sustainable Development Goals (SDGs).

## Periodic report

Track university research  
outcomes against SDGs

SDG Tahun Rilis & Jumlah Rilis



Top 3 SDG



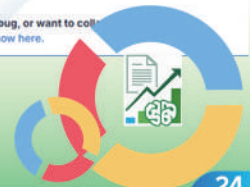
SDG Classification



Have feedback, found a bug, or want to collab?  
Let us know here.

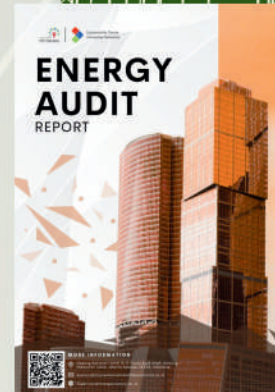
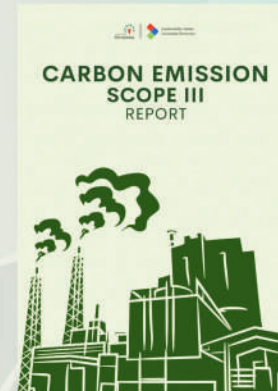
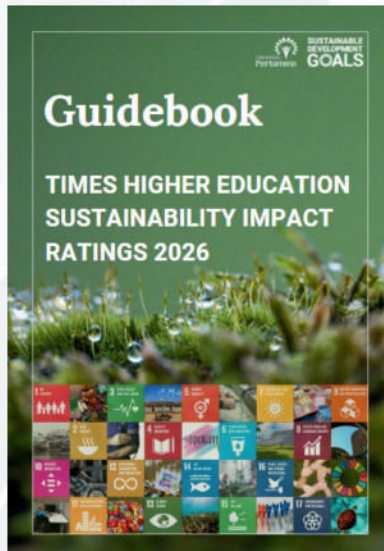


Try it now: <https://super.universitaspertamina.ac.id/index.php/smart/>





# Report and Research in 2025





Universitas  
Pertamina



Sustainability  
Center



# EDUCATION

Sustainability

2025

*Creating Transformation and  
Impact*



## Sustainability programs are important for career advancement, especially in the growing sustainability field

**Green jobs are booming, but too few employees have sustainability skills to fill them – here are 4 ways to close the gap**

Diterbitkan: Januari 5, 2023 8:27pm WIB



*"The number of companies with chief sustainability officers in executive positions also tripled from 9% to 28% between 2016 and 2021. But given the scale and business opportunities of sustainability, these skills are needed much more widely within organizations."*  
*Boon & Seto (2023)*

### Growth in demand for green skills is outpacing the increase in supply

Between 2022 and 2023

**+12.3%** **+22.4%**

Share of green talent in the workforce

Share of job postings requiring at least one green skill



#### Validation of Knowledge and Skills

Sustainability certifications validate an individual's knowledge and skills in the field.

#### Credibility

Sustainability certifications come from reputable organizations or institutions, lending credibility to the holder.

#### Competitive Advantage

In a job market where sustainability is increasingly important, having relevant certifications can give job seekers a competitive advantage.

#### Access to Opportunities

Some job opportunities, especially in sustainability-focused organizations or roles, may require or prefer candidates with specific certifications.

#### Salary and Advancement

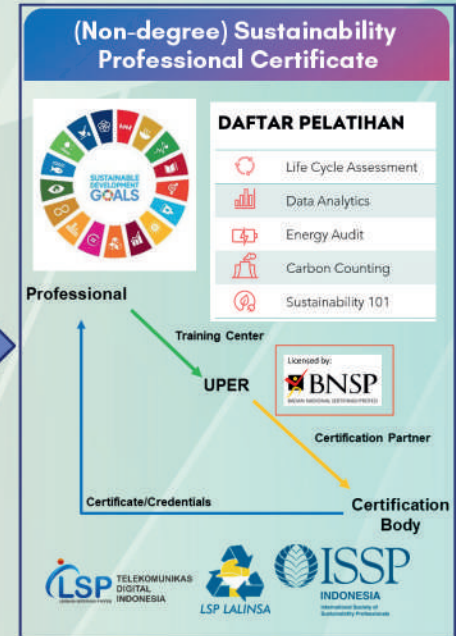
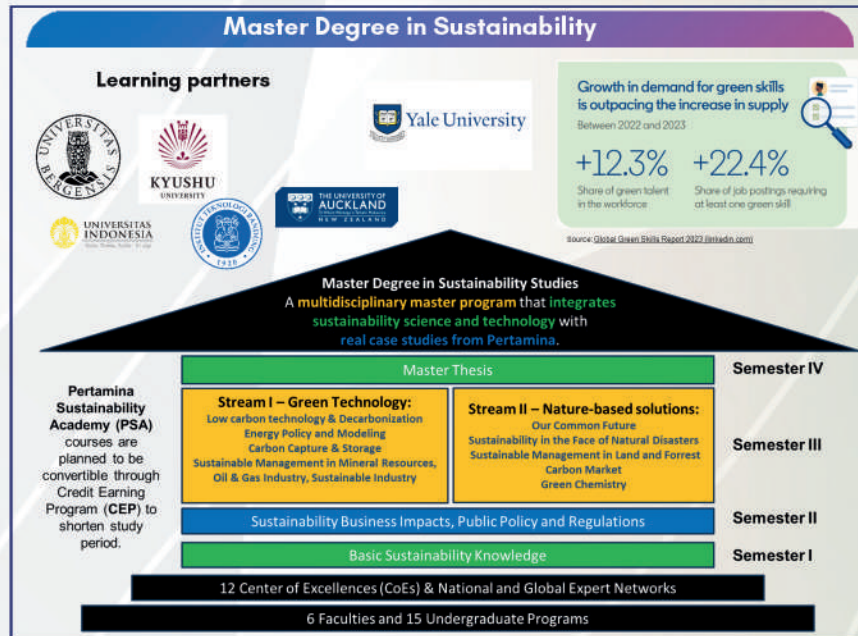
Certification can lead to better compensation and advancement opportunities.

#### Global Recognition

Many sustainability certifications have global recognition, making it easier for individuals to pursue international career opportunities or work on global sustainability challenges.



# Sustainability Center to Support in Advancing Education and Professional Career and Towards Technology and Business Energy



# MASTER OF SCIENCE IN SUSTAINABILITY

## Energizing Leaders for a Sustainable Future



Master of Science in Sustainability at Universitas Pertamina is unique because it is designed using an interdisciplinary, multidisciplinary, and/or transdisciplinary approach to provide scientific-based knowledge, skills, and equip students with green skills competencies to tackle sustainability challenges in both private and government sectors. Students are given flexibility to choose various fields of study to prepare for their professional careers. Considering the complexity of sustainability challenges, the program includes mandatory courses and 2 (two) concentrations: Green Technology and Nature-based Solution.

### **List of Mandatory Courses:**

1. Systems Thinking for Sustainability
2. Valuing Natural Resources & the Environment
3. Methodology and Ethics of Sustainability Research
4. Energy Policy & Planning
5. Quantitative Analysis in Sustainability
6. Capita Selecta in the Transition Era
7. Environmental Evaluation for Sustainability
8. Environmental & Natural Resources Regulations
9. Innovation in Sustainability
10. Principles of Environmental Management

# MAGISTER MANAJEMEN

Risk Management | Sustainable Finance



## The Master of Management program at Universitas Pertamina

Prepares professionals and graduates to lead in today's dynamic business environment, with a focus on risk management and sustainable finance. This program equips students with strategic insights, ESG awareness, and leadership skills to address modern business risks and opportunities through two concentration tracks:

### Concentrations:

#### 1. Risk Management

Focuses on managing business risks including liquidity, credit, market, and operations, aligned with sustainability goals.

#### 2. Sustainable Finance

Emphasizes corporate finance, portfolio investment, and digital finance with sustainability integration.

### List of Mandatory Courses:

1. Global Sustainability and Operation Management
2. Environmental Legal Aspect
3. Business Risk and ESG
4. Leadership for Sustainable Competitive Advantage
5. Global Sustainability Marketing
6. Business Sustainability & Financial Analysis



# Continuing Education Training provided by Sustainability Center



# LIST IN 2025



Data Analytics



Life Cycle Assessment



Carbon Counting



Energy Audit



Sustainability Excellence Associate (SEA)





## DATA ANALYTIC

No	Topik	Sub Topik
1	Pengenalan Data Analysis	<ul style="list-style-type: none"> <li>- Definisi dan konsep dasar Data Analysis.</li> <li>- Peran dan tanggung jawab seorang Data Analyst.</li> <li>- Peluang karir di bidang Data Analysis.</li> </ul>
2	Pengolahan Data dengan Microsoft Excel	<ul style="list-style-type: none"> <li>- Teknik pengolahan data menggunakan Excel.</li> <li>- Fungsi dan formula penting dalam analisis data.</li> <li>- Visualisasi data dasar dengan grafik dan tabel.</li> </ul>
3	Dasar-dasar SQL	<ul style="list-style-type: none"> <li>- Pengenalan bahasa SQL.</li> <li>- Query dasar: SELECT, INSERT, UPDATE, DELETE.</li> <li>- Penggunaan SQL untuk ekstraksi dan manipulasi data.</li> </ul>
4	Pengantar Python untuk Data Analysis	<ul style="list-style-type: none"> <li>- Dasar-dasar pemrograman Python.</li> <li>- Library Python untuk analisis data: Pandas, NumPy, Matplotlib.</li> <li>- Implementasi Python dalam proyek analisis data.</li> </ul>
5	Visualisasi Data	<ul style="list-style-type: none"> <li>- Fundamental Visualisasi</li> <li>- Visualisasi Data dengan Tableau/Power BI/Google Data Studio</li> </ul>
6	Studi Kasus dan Proyek Akhir	<ul style="list-style-type: none"> <li>- Analisis studi kasus nyata.</li> <li>- Pengerjaan proyek akhir sebagai portofolio.</li> <li>- Presentasi hasil analisis data.</li> </ul>
7	Persiapan Karir sebagai Data Analyst	

### Targeted Participants:

- ✓ Individuals who want to start a career as a Data Analyst
- ✓ Professionals who want to improve their data analysis skills
- ✓ Students or recent graduates interested in the field of Data Analysis
- ✓ Industry workers who want to enhance their competence in data analysis







## LIFE CYCLE ASSESSMENT

No	Topik	Subtopik
1	Konsep Dasar LCA	<ul style="list-style-type: none"> <li>- Pengenalan Life Cycle Assessment berdasarkan SNI ISO 14040:2016 dan SNI ISO 14044:2017.</li> <li>- Hubungan LCA dengan dukungan keputusan lingkungan, kesadaran lingkungan, keunggulan bisnis, produksi bersih, dan PROPER.</li> </ul>
2	Metodologi LCA	<ul style="list-style-type: none"> <li>Tahap 1: Goal and Scope</li> <li>Tahap 2: Life Cycle Inventory</li> <li>Tahap 3: Life Cycle Impact Assessment (LCIA)</li> <li>Tahap 4: Interpretation</li> </ul>
3	Aplikasi LCA dengan Perangkat Lunak	<ul style="list-style-type: none"> <li>- Instalasi dan pengenalan software OpenLCA.</li> </ul>
4	Studi Kasus dan Latihan Praktis	<ul style="list-style-type: none"> <li>- Studi kasus penerapan LCA.</li> </ul>
6	Penyusunan Laporan LCA PROPER	<ul style="list-style-type: none"> <li>- Cara menyusun laporan LCA sesuai dengan standar PROPER.</li> </ul>
7	Aspek Sosial dan Kualitas Data dalam LCA	<ul style="list-style-type: none"> <li>- Diskusi aspek sosial dalam LCA dan kualitas data dalam proses LCA</li> </ul>

### Targeted Participants:

- ✓ Environmental and sustainability professional. Product manager and business development. Academic and researcher interested in LCA (Life Cycle Assessment). Senior-level student in environmental engineering or environmental management.
- ✓
- ✓
- ✓
- ✓



## CARBON COUNTING

No	Topik
1	Pengantar Perubahan Iklim
2	Regulasi dan Kebijakan Perhitungan dan Pelaporan GRK
3	Pengantar Target Net Zero: Enhanced NDC
4	Pengantar Perhitungan Emisi GRK
5	Metodologi Perhitungan Emisi GRK (Scope I, II, III)
6	Pelaporan Perhitungan Emisi GRK
7	Etika dalam Perhitungan Emisi GRK

### Targeted Participants:

- ✓ Academics and researchers in the field of climate change.
- ✓ Environmental consultants and auditors. Fresh graduates or alumni.
- ✓ Professionals in the field of environment and sustainability.



## ENERGY AUDIT

No	Topik	Sub Topik
1	Konsep Dasar Manajemen Energi dan Audit Energi	<ul style="list-style-type: none"> <li>- Definisi dan tujuan manajemen energi.</li> <li>- Pentingnya audit energi dalam konservasi energi.</li> <li>- Manfaat langsung dan tidak langsung dari audit energi.</li> </ul>
2	Jenis-Jenis Audit Energi	<ul style="list-style-type: none"> <li>- Audit energi awal (Preliminary Energy Audit).</li> <li>- Audit energi rinci (Detailed Energy Audit).</li> <li>- Metodologi sepuluh langkah untuk audit energi rinci.</li> </ul>
3	Tahap Persiapan Audit Energi	<ul style="list-style-type: none"> <li>- Perencanaan dan pengorganisasian audit.</li> <li>- Pengumpulan data awal dan analisis pendahuluan.</li> <li>- Pembuatan diagram alir energi.</li> </ul>
4	Tahap Pelaksanaan Audit Energi	<ul style="list-style-type: none"> <li>- Inventarisasi data dan manajemen.</li> <li>- Representasi grafis data konsumsi energi.</li> <li>- Analisis pola penggunaan energi dan benchmarking.</li> <li>- Identifikasi potensi penghematan energi.</li> <li>- Analisis biaya-manfaat.</li> </ul>
5	Tahap Pelaporan Audit Energi	<ul style="list-style-type: none"> <li>- Penyusunan laporan audit energi dengan rekomendasi.</li> <li>- Pembuatan rencana aksi dan implementasinya.</li> <li>- Contoh laporan audit energi.</li> </ul>
6	Standar ISO 50001 dan Manajemen Energi	<ul style="list-style-type: none"> <li>- Pengenalan ISO 50001.</li> <li>- Pendekatan Plan-Do-Check-Act dalam ISO 50001.</li> <li>- Perbandingan ISO 14001 dan ISO 50001.</li> <li>- Studi kasus penerapan ISO 50001 di industri.</li> </ul>

### Targeted Participants:

- ✓ Professionals working in the energy, industrial, and building sectors. Energy
- ✓ managers who want to enhance their competencies. Consultants and
- ✓ auditors in the field of energy efficiency. Industry workers who want
- ✓ to improve their competence in data analysis. Individuals who aspire to become certified Energy Auditors.



## Sustainability Excellence Associate (SEA)

No	Topik
1	Issues, Trends, Impacts, and Perspectives
2	Social Justice, Impact, and Responsibility
3	Frameworks and Principles
4	Systems Thinking and Interdependencies
5	Business Case for Sustainability Practices
6	History of Sustainability
7	Global Institutions and Initiatives
8	Regulations and Policy
9	Standards, Protocols, and Certifications
10	Tools and Technology

### Targeted Participants:

- ✓ Corporate Sustainability Officer
- ✓ Fresh graduates or alumni
- ✓ Students (general)



Sustainability  
Center

SUSTAINABLE  
DEVELOPMENT  
GOALS

# How Sustainability Center supports Pertamina Group



## Sustainability Center at UPER to accelerate and drive business at PERTAMINA towards the SDGs



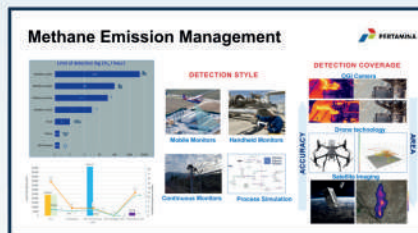
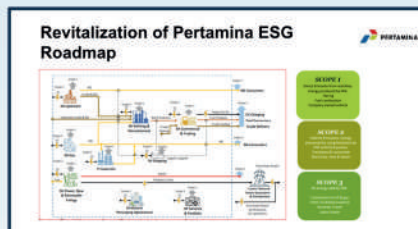
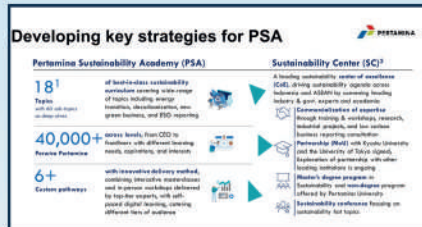
### 5 Key questions (need to be addressed before 2030)

- 1 How can PERTAMINA make use SDGs to **leverage its business**?
- 2 How can PERTAMINA empower **leaders in green energy business**?
- 3 How should PERTAMINA deal with regulation and socio-environmental of **CCS-CCUS**?
- 4 How can PERTAMINA translate **decarbonization** to **enhanced investment**?
- 5 How can we **maximize global partnership** to build a new growth



# Sustainability Project Example

Since 2024, Sustainability Center Universitas Pertamina had supported PERTAMINA Group with total project valuation of more than USD 1.96 M/year



# Product and Services

*within Pertamina Group*

Provided by Universitas Pertamina in 2024



Sustainability Center  
Universitas Pertamina



## 1 Studi dan Kajian Strategis

- Strategi Pengembangan Sumur Idle Well di Lingkungan Pertamina Subholding
- Kajian Reorganisasi Fungsi Supply Chain
- Kajian Master Plan Logistik BBM
- IPT Optimization & Sustainability Integrated Port Time
- Engineering Kinerja CP Pipa Bawah Laut PT NR
- Studi Pemetaan Potensi Sumber Energi Karbon di Area Sumatera
- Monitoring Dynamic Scheduling System (DSAS)
- Studi GGR Subsurface EOR
- Studi Efektivitas Seal & Pelamangan Hidrokarbon
- FSA & MSA di Area Glagah Komplek Offshore North Sumatra
- DHI 3D Seismic
- Studi Potensi Geologi Hidrogen - East Sulawesi Ophiolite
- Riset Energi ASEAN
- LMS Development - Pertamina Sustainability Academy
- Penilaian Kompetensi - PT Elnusa Tbk

## 2 Konsultasi dan Implementasi Sistem Manajemen

- Sertifikasi & Implementasi Asset Management ISO 55001
- Konsultasi ERM, BCMS, QMS, Budget Optimization
- Penyusunan Pertamina Standard - Surface Facility
- Konsolidasi Aset (Power & Utilities)

## 3 Pengembangan Teknologi dan Inovasi

- Software Pertavar v2.0 AI (QTOMO IV)
- Pemetaan Seismik - CLIRTON
- Metode Low-Frequency Seismic - Geothermal Fluida
- Battery Pack Manufacture/Tech Provider

## 4 Studi dan Penerapan Energi Baru dan Terbarukan

- Konsultan DED PLTS RU V Balikpapan
- Feasibility Study PLTS Sei Mangkei
- Proyek Bioethanol
- Studi Dekarbonisasi & Transisi Energi PIEP

## 5 Evaluasi dan Peningkatan Kapasitas Operasional

- SAP-PM FT Plumpang & FT Tegal Baru
- Monitoring Master Program, SLA Deviation & Charge Back
- Dynamic Scheduling & Automation
- Perencanaan O&M Pembangkit PNRE

## 6 Konsultasi dan Pelatihan ESG dan Keberlanjutan

- Perbaikan Rating ESG - PT Pertamina Hulu Energi
- Peta Jalan ESG & Dekarbonisasi
- Modul Sustainability PT Pertamina 2024
- Roadmap Low Carbon Fuel - PT Patra Niaga

## 7 Pengelolaan Logistik, Keekonomian, dan Konsolidasi Proyek

- Buku Masterplan Logistik LPG
- Kajian Master Plan Logistik BBM
- Konsolidasi Aset (Power & Utilities) Pertamina Group
- Studi Power & F&B Tahap II dan III

# Capacity Building | Sustainability Center

We helped to support sustainability learning program at Pertamina Sustainability Academy

## Sustainability Competencies Pertamina

Resume Core Skill di strukturisasi berbasis Supreme

Resume Core Skill
Foundational Knowledge
An Ability to Identify Strategic Opportunities
Sustainability Leadership
Forward Thinking
Creative Problem Solving
Business Acumen for Sustainability
Data Literacy
Effective Communication
Continual and Transformational Improvement
Sustainable Development
Risk Management and Resilience
Sustainability Management & Strategy

Core Skill Terpilih	Code
Sustainability Leadership	C-01
Sustainability Compliance	C-02
An Ability to Identify Strategic Opportunities	C-03
Business Acumen for Sustainability	C-04
Active Listening	C-05
Effective Communication	C-06
Data Literacy	C-07
Forward Thinking	C-08
Creative Problem Solving	C-09
Continual and Transformational Improvement	C-10

## Sustainability Mandatory Training Modules



## Sustainability Awareness Program





# ESG Rating | Sustainability Center

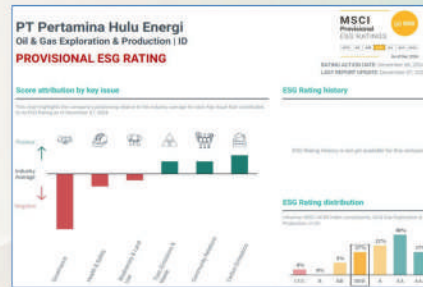
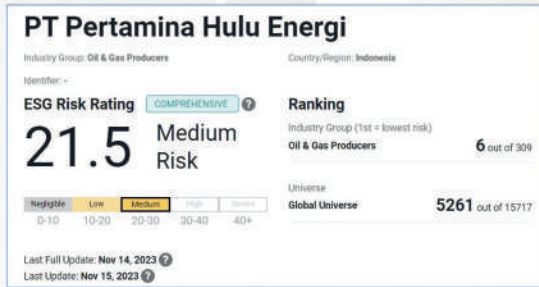
We have helped to continuously support ESG Rating improvement at Pertamina Hulu Energi (PHE)



2023  
**21.5**

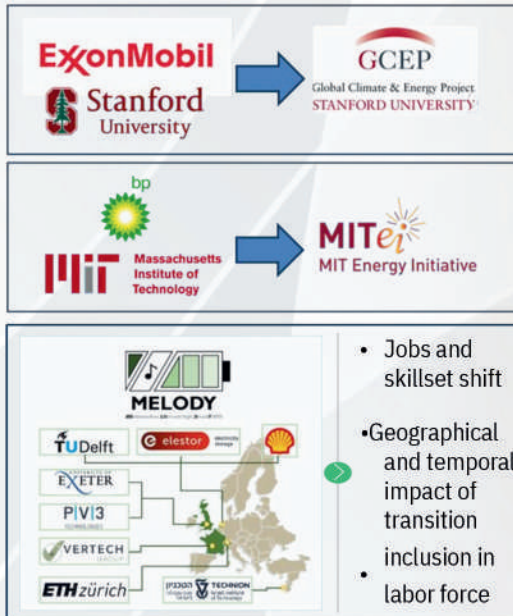
MSCI

2024  
**BBB**



## Learning from success story:

O&G and University Partnership to enable knowledge & skill access and transfer. Some success story includes:



## Project outlook within Pertamina Group



**Mapping** Pertamina Industry to the Sustainable Development Goals (SDGs)



Leveraging **module learning** in Sustainability: Up-skilling stages, Advancing program streams, Credit Transfer, Global Internship programs, Certification



**Navigating Programs** for Pertamina's focal point roles as expert pool, collaboration hub, research, and education in sustainability



Shadow Assurance tools for **Carbon Counting** from all Sub-Holdings: Verification and Validation Scheme



**Sustainability Roadmap** for complex **petrochemical and hydrogen** industry



Regulation mapping, gap analysis, and social-economic impacts on **CCS-CCUS** in Indonesia



Supervision to improve **ESG** rating



**Revisiting NZE** roadmap



Curation and monitoring effectiveness on Decarbonization programs



**CO2 pricing mechanism** and sustainable financing measures for energy

# Sustainability Initiatives



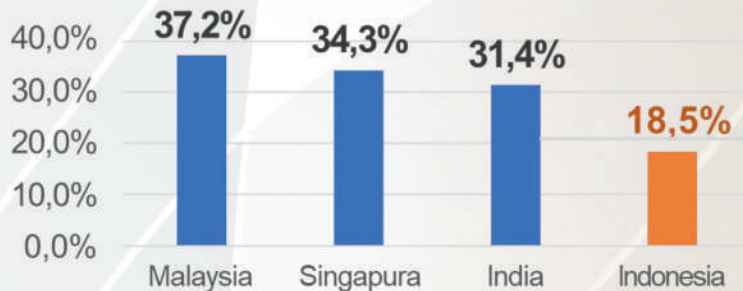


# Sustainability Center contributes for a better STEM Education

(aligned with National Agenda and SDGs)



"Karena itu, saudara-saudara, kita akan fokus kepada pendidikan yang kita sebut STEM, Science, Technology, Engineering, Mathematics. Ini akan kita kebut, walaupun bidang-bidang lain pun kita akan bina juga"



# Research Outreach & Conferences



Sustainability Center together with Pertamina Foundation, 6 Faculties, 12 Center of Excellences, and Community regularly organize scientific conferences  
**Showcasing sustainability practices for climate solution**





## Global Green Chemistry Innovation and Network Programme (GGINP)



The Global Green Chemistry Innovation and Network Programme (GGINP) is a regional initiative by GEF, Yale University, UNIDO, the Ministry of Industry, and Universitas Pertamina to promote and initiate green chemistry practices in Indonesian industries.

## Potential



**Educate** targeted stakeholders on Green Chemistry alternative through their own awareness training program **Promote** 12 Green Chemistry principles into practices to instill sustainability spirits in employee's daily life





## UPGRADES:

**Universitas Pertamina Grant for Research and Action on Development and Environmental Sustainability**



**UPGRADES is essential** for several reasons by aligning both: operational efficiency in Sustainability University Framework and SDG goals and indicators in every global university ranking.

✓ **UPGRADES enhances UPer impacts** on environmental responsibility, financial savings, compliance with regulations, educational opportunities, contribution to SDGs, enhanced reputation and attractiveness, strategic decision-making, and campus community leadership.

How to define a Sustainable University?

The UNEP **Sustainable University Framework**



## Policy and Science Advocacy Activities for Sustainability

Writing is a powerful tool to connect science with society—and ensure it has real-world impact. Stakeholder engagement is actively pursued, for instance advancing effective CCS (Carbon Capture and Storage) policies through inclusive dialogue and collaboration. We also advocate for and provide expert support in drafting evidence-based policies to empower government decision-making. This are shown by some of our sustainability fellow.

THE CONVERSATION  
Dialogis Berhikmah, gaya jernatistik



**Harya D. Nugraha, Ph.D.**

Ekonomi | Ibu Anak Muda | Kesehatan | Lingkungan | Pendidikan + Budaya | Politik + Masyarakat | Sains + Teknologi



**Longsor bawah laut: Ancaman pemicu tsunami dalam senyap**

Diterbitkan: Mei 13, 2025 9:25am WIB



**Dr. Farah Mulyasari**



**Dr. Gede Adhyaksa**



Penyusunan RSKKNI Bidang Aksi Mitigasi Pengendalian Perubahan Iklim Sektor (166.K/EK.07/DEK.T/2024)









*"...education saves lives and transforms lives, it is the bedrock of **sustainability**."*

**Irina Bokova** UNESCO Director-General

## *Creating Transformation and Impact*

### CONTACT

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