



Mengambil tindakan cepat untuk mengatasi perubahan iklim dan dampaknya

Take urgent action to combat climate change and its impacts



#101-200

**THE Impact Ranking 2025
pada kategori TPB 13**

*THE Impact Ranking 2025
in SDG 13 category*



23

**program studi yang
berkaitan dengan TPB 13**

*study programs related to
SDG 13*

UI Institute for Net Zero Initiative: Pusat Keunggulan Transisi Menuju Emisi Nol Bersih

Universitas Indonesia (UI) mengambil tindakan strategis untuk mengatasi perubahan iklim dengan membentuk **UI Institute for Net Zero Initiative (UI NZI)**. UI NZI dirancang sebagai pusat keunggulan berorientasi hasil untuk integrasi peneliti dan pusat riset UI demi mempercepat transisi menuju emisi nol bersih (*net zero emission*). Melalui pendekatan holistik, UI NZI menyatukan *Centre for Excellence in Energy Transition* dan *Center for Excellence in Conservation and Green Economy* sebagai bentuk nyata komitmen UI untuk menciptakan perubahan nyata yang berkelanjutan.

UI Institute for Net Zero Initiative: Center of Excellence for Net Zero Transition

Universitas Indonesia (UI) is taking strategic action in tackling climate change by establishing the **UI Institute for Net Zero Initiative (UI NZI)**. UI NZI is designed as a results-oriented center of excellence to integrate UI researchers and research centers in accelerating the transition toward net-zero emissions. Through a holistic approach, UI NZI unites the *Center for Excellence in Energy Transition* and the *Center for Excellence in Conservation and Green Economy*, reflecting UI's commitment to creating tangible and sustainable change.

1

Center for Excellence in Energy Transition

Tropical Renewable Energy Center Fakultas Teknik UI (TREC FT UI)

Tropical Renewable Energy Center of UI's Faculty of Engineering (TREC FT UI)

Pusat Riset Kendaraan Mutakhir Fakultas Teknik UI (RCAVe FT UI)

Research Center for Advanced Vehicle of UI's Faculty of Engineering (RCAVe FT UI)

Advanced Materials Research Center Fakultas Teknik UI (AMRC FT UI)

Advanced Materials Research Center of UI's Faculty of Engineering (AMRC FT UI)

Sustainable Energy Systems and Policy UI (SESP UI)

2

Center for Excellence in Conservation and Green Economy

Lembaga Sains Terapan Fakultas Matematika dan Ilmu Pengetahuan Alam UI (LST FMIPA UI)

Applied Science Institute of UI's Faculty of Mathematics and Natural Sciences (LST FMIPA UI)

Pusat Riset Perubahan Iklim UI (RCCC UI)

Research Center for Climate Change UI (RCCC UI)

Pusat Data Sains LST FMIPA UI (DSC FMIPA UI)

Data Science Center of LST FMIPA UI (DSC FMIPA UI)

Pusat Penelitian Geografi Terapan Fakultas Matematika dan Ilmu Pengetahuan Alam (PPGT FMIPA UI)

Center for Applied Geography Research of UI's Faculty of Mathematics and Natural Sciences (PPGT FMIPA UI)

Lembaga Penyelidikan Ekonomi dan Masyarakat Fakultas Ekonomi dan Bisnis UI (LPEM FEB UI)

Institute for Research on Economics and Society of UI's Faculty of Economics and Business (LPEM FEB UI)

Tax Centre Fakultas Ilmu Administrasi UI (Tax Centre FIA UI)

Tax Centre of UI's Faculty of Administrative Sciences (Tax Centre FIA UI)

Selama 3 tahun sejak pendiriannya, *Center for Excellence in Energy Transition* dan *Center for Excellence in Conservation and Green Economy* akan terus memperkuat peran UI dalam aksi iklim. Tahapan kegiatannya terstruktur, mulai dari koordinasi dan pemberdayaan pada tahun 2024, intensifikasi pada 2025, hingga keberlanjutan pada 2026.

Over a period of 3 years, the *Center for Excellence in Energy Transition* and the *Center for Excellence in Conservation and Green Economy* will strengthen UI's role in climate action. The activities are structured in phases, from coordination and empowerment in 2024, to intensification in 2025, and finally, sustainability in 2026.

		2024 Koordinasi dan Pemberdayaan <i>Coordinate and Empowering</i>	2025 Intensifikasi <i>Intensifying</i>	2026 Keberlanjutan <i>Sustaining</i>
Center for Excellence in Energy Transition	TREC FT UI	Material maju untuk pengembangan baterai; konversi biomassa menjadi listrik/bahan bakar <i>Advanced material for battery development; biomass conversion to electricity/fuels</i>	Uji baterai; uji PV <i>Battery testing; PV testing</i>	Energi fluida dan maritim <i>Fluidic and maritime energy</i>
	RCAVe FT UI	Sistem mekanik dan penggerak; motor listrik dan sistem propulsi <i>Mechanical and driving system; electric motor and propulsion system</i>	Sistem manajemen termal EV, uji sepeda motor listrik <i>EV thermal management system; electric motorcycle testing</i>	Layanan uji sepeda motor listrik <i>Electric motorcycle testing services</i>
	AMRC FT UI	Material polimer fungsional; material energi nanostruktur <i>Functional polymer materials, nanostructured energy materials</i>	Material energi nanostruktur; fotokatalisis; perangkat nano, elektroliser <i>Nanostructured energy materials; photocatalysis; nano devices; electrolyzer</i>	Fotokatalisis; material mesopori; perangkat nano; sel bahan bakar <i>Photocatalysis, mesoporous materials, nano devices, fuel cell</i>
	SESP UI	Dekarbonisasi sektor energi multiregional untuk mencapai emisi nol bersih, perspektif sektor kelistrikan <i>Multi-regional energy sector decarbonization to achieve net zero emission, power sector perspective</i>	Dekarbonisasi sektor energi multiregional untuk mencapai emisi nol bersih, perspektif sisi permintaan <i>Multi-regional energy sector decarbonization to achieve net zero emission, demand-side perspective</i>	Dekarbonisasi sektor energi multiregional untuk mencapai emisi nol bersih, integrasi sektoral <i>Multi-regional energy sector decarbonization to achieve net zero emission, sectoral integration</i>
Center for Excellence in Conservation and Green Economy	LST FMIPA UI	Penilaian risiko lingkungan <i>Environmental risk assessment</i>	Karbon dan biomassa; dinamika tanaman <i>Carbon and biomass; plant dynamics</i>	Praktik terbaik untuk manajemen risiko lingkungan <i>Best practice for environmental risk management</i>
	RCCC UI	Dampak bahan bakar fosil terhadap permukaan lahan <i>Effect of fossil fuel on land surface</i>	Deforestasi dan solusi iklim berbasis alam <i>Deforestation and nature-based climate solution</i>	Praktik terbaik untuk konservasi, hutan berkelanjutan dan pertanian; dan sequestrasi karbon di hutan dan pertanian <i>Best practice for conservation, sustainable forest and agriculture; and carbon sequestration of forest and agriculture</i>
	DSC FMIPA UI	Pengumpulan data fluktuasi iklim <i>Data collection on climate fluctuation</i>	Respons keanekaragaman hayati terhadap gangguan antropogenik dan perubahan iklim <i>Response of biodiversity to anthropogenic disturbance and climate change</i>	Praktik terbaik untuk adaptasi dan mitigasi iklim <i>Best practice for climate adaptation and mitigation</i>
	PPGT FMIPA UI	Penilaian risiko lingkungan <i>Environmental risk assessment</i>	Pemetaan spasial perubahan lingkungan <i>Spatial mapping on environmental changing</i>	Praktik terbaik untuk ketahanan komunitas <i>Best practice for community resilience</i>
	LPEM FEB UI	Strategi pembangunan transisi energi yang inklusif <i>Strategy for building an inclusive energy transition</i>	Skema inovatif untuk pembiayaan proyek energi terbarukan <i>Innovative scheme for financing renewable energy project</i>	Revolusi pembiayaan efisiensi energi: Pendekatan inovatif dan implikasi kebijakan <i>Revolutionizing energy efficiency financing: Innovative approaches and policy implications.</i>

UI Menuju Net Zero: Peresmian Laboratorium Canggih Senilai Rp178 Miliar

Sebagai wujud nyata komitmen dalam mengatasi perubahan iklim, UI **meresmikan 5 Advanced Laboratorium UI-NZI** pada Januari 2025. Kelima laboratorium tersebut yaitu Energy Transition Laboratory (ETL), Sustainable Energy System Laboratory (SESL), Electric Vehicle Testing Laboratory (EVTL) yang ketiganya di FT; Environmental and Conservation Laboratory (ECL) di FMIPA; dan Indonesia Climate Modeling and Policy Hub (I-CLIMB) di FEB.

Melalui dana hibah Pusat Unggulan Antar Perguruan Tinggi (PUAPT) senilai 178 miliar rupiah, fasilitas riset di 3 fakultas ini berfokus pada energi terbarukan, konservasi lingkungan, kendaraan listrik, dan pemodelan iklim. Kehadiran laboratorium ini memperkuat UI sebagai pusat inovasi dan kolaborasi untuk mendukung pencapaian target *net zero emission* Indonesia pada tahun 2060.

Kolaborasi Lintas Negara UI dan Monash University untuk Kesehatan Masyarakat Tangguh Iklim

Dalam rangka pengembangan ilmu yang responsif terhadap tantangan nyata, Fakultas Ilmu Keperawatan UI (FIK UI) bersama Monash University menginisiasi **riset kolaboratif lintas negara** (melibatkan Malaysia, Bangladesh, dan Fiji) untuk memahami dampak perubahan iklim terhadap kesehatan masyarakat.

Melalui lokakarya di Jakarta dan Pekalongan, peneliti secara langsung mengumpulkan wawasan dari warga mengenai tantangan mendesak, seperti banjir, rob, *stunting*, dan keterbatasan air bersih. Hasil temuan lapangan ini akan diolah menjadi Kerangka Kerja Perubahan Iklim dan Kesehatan serta Knowledge Hub di FIK UI. Riset ini diharapkan menghasilkan rekomendasi kebijakan yang relevan dan adaptif, menegaskan komitmen UI dalam menciptakan riset yang berpihak pada kebutuhan riil masyarakat.



Gambar 13.1 Peresmian Advanced Laboratorium UI-NZI
Figure 13.1 Inauguration of Advanced UI-NZI Laboratories

UI Toward Net Zero: Inauguration of Advanced Laboratories Worth Rp178 Billion

As a tangible demonstration of its commitment to addressing climate change, UI **inaugurated 5 Advanced UI-NZI Laboratories** in January 2025. The 5 laboratories include the Energy Transition Laboratory (ETL), Sustainable Energy System Laboratory (SESL), and Electric Vehicle Testing Laboratory (EVTL), all 3 located in the FT; the Environmental and Conservation Laboratory (ECL) located in the FMIPA; and the Indonesia Climate Modeling and Policy Hub (I-CLIMB) located in the FEB.

Through a grant from the Inter-University Center of Excellence (PUAPT) totaling 178 billion rupiah, research facilities across three faculties are focused on renewable energy, environmental conservation, electric vehicles, and climate modeling. The presence of these laboratories strengthens UI's role as a hub for innovation and collaboration in support of Indonesia's net zero emission target by 2060.

UI and Monash University Cross-Country Collaboration for Climate-Resilient Public Health

As part of advancing knowledge that responds to real-world challenges, the Faculty of Nursing UI (FIK UI), in collaboration with Monash University, is initiating **cross-country collaborative research** (involving Malaysia, Bangladesh, and Fiji) to understand the impact of climate change on public health.

Through workshops held in Jakarta and Pekalongan, researchers directly gathered insights from residents regarding urgent challenges such as flooding, tidal flooding (rob), *stunting*, and limited access to clean water. The findings from the field will be processed into a Climate Change and Health Framework and a Knowledge Hub at FIK UI. This research is expected to generate relevant and adaptive policy recommendations, affirming UI's commitment to creating research that addresses the real needs of the community.



Gambar 13.2 Sesi FGD UI, Monash University dan Pemerintah Daerah
Figure 13.2 FGD Session between UI, Monash University, and Local Government

Menjadi Referensi Penyusunan Kebijakan Nasional: Mahasiswa FT UI Kaji Potensi Hidrogen Alami di Sulawesi

Dengan tekad menghadirkan riset yang relevan bagi masa depan energi Indonesia, Deni Suryo Pratama, mahasiswa Teknik Kimia FT UI, mengidentifikasi potensi hidrogen geologis di Tanjung Api, Sulawesi Tengah sebagai sumber energi bersih strategis dengan kandungan hidrogen alami hingga 35,56%. Deni mengusulkan teknologi *Pressure Swing Adsorption* (PSA) untuk memurnikan hidrogen hingga 99,99% serta menunjukkan skema ekonomi yang dapat menekan *Levelized Cost of Hydrogen* (LCOH) hingga USD 3,89/MMBTU jika gas alam dijual sebagai produk sampingan. Riset ini kini menjadi rujukan Kementerian ESDM, membuka jalan bagi pembangunan infrastruktur hidrogen dan kontribusi nyata menuju target *Net Zero Emission* 2060.

Seminar Peluncuran Risalah Kebijakan Terkait Dinamika Tata Kelola Hutan

Sebagai bagian dari komitmen UI terhadap keadilan ekologis dan tata kelola ruang hidup yang inklusif, Klaster Ruang Hidup dan Transformasi Sosial Politik Fakultas Ilmu Sosial dan Ilmu Politik (FISIP) UI meluncurkan risalah kebijakan berjudul "Merawat Ekosistem Hutan untuk Kepentingan Pengurangan Emisi dan Keadilan Masyarakat atas Ruang Hidupnya" pada 11 Maret 2025. Kegiatan ini dikemas dalam bentuk seminar hibrida yang mempertemukan akademisi, praktisi kebijakan, serta perwakilan masyarakat sipil untuk membahas dinamika tata kelola hutan dalam konteks perubahan iklim dan hak atas ruang hidup.

Diskusi ini memusatkan perhatian pada rencana alokasi 20 juta hektar lahan untuk pangan dan energi dalam kebijakan kehutanan terbaru. Para peserta menelaah dampak kebijakan tersebut terhadap keanekaragaman hayati, emisi karbon, serta ancaman terhadap keberlangsungan komunitas adat dan lokal. Dalam situasi krisis iklim yang kian mendesak, acara ini menekankan pentingnya pendekatan interdisipliner yang mempertimbangkan seluruh aspek sosial, ekonomi dan lingkungan secara holistik dalam perumusan kebijakan.

Becoming a Reference for National Policy Making: FT UI Student Studies Natural Hydrogen Potential in Sulawesi

With a strong commitment to delivering research that supports the future of Indonesia's energy landscape, Deni Suryo Pratama, a chemical engineering student at FT UI, identified the geologic hydrogen potential at Tanjung Api, Central Sulawesi, as a strategic clean energy source with natural hydrogen content up to 35.56%. Deni proposed *Pressure Swing Adsorption* (PSA) to purify hydrogen to 99.99% and demonstrated an economic scheme that could lower the *Levelized Cost of Hydrogen* (LCOH) to USD 3.89/MMBTU if natural gas is sold as a byproduct. This research has become a reference for the Ministry of Energy and Mineral Resources, paving the way for hydrogen infrastructure development and a tangible contribution toward the *Net Zero Emission* 2060 target.

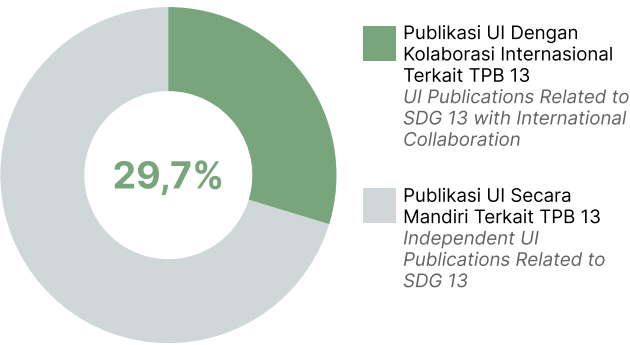
Seminar Launch of Policy Brief on Forest Governance Dynamics

As part of UI's commitment to ecological justice and inclusive governance of living spaces, the Living Spaces and Socio-Political Transformation Cluster of UI's Faculty of Social and Political Sciences launched a policy brief titled "Caring for Forest Ecosystems for Emission Reduction and Community Justice" on 11 March 2025. This event was presented as a hybrid seminar that brought together academics, policy practitioners, and civil society representatives to discuss forest governance dynamics in the context of climate change and rights to living space.

This discussion focused on the proposed allocation of 20 million hectares for food and energy in the latest forestry policy. The participants examined its impacts on biodiversity, carbon emissions, and the survival of indigenous and local communities. Amid an escalating climate crisis, the event underscored the need for an interdisciplinary approach that holistically integrates social, economic, and environmental considerations into policy formulation.

Gambar 13.3 Seminar Peluncuran Risalah Kebijakan Terkait Dinamika Tata Kelola Hutan
Figure 13.3 Seminar Launch of Policy Brief on Forest Governance Dynamics

Keluaran Riset Terkait TPB 13
SDG 13-related Research Output



Gambar 13. 4 Publikasi Terkait TPB 13 yang Ditulis Bersama dengan Institusi dari Negara/Wilayah Lain pada 2020-2025
Figure 13.4 SDG 13-related Publications Co-authored with Institutions in Other Countries/Regions in 2020-2025

222

keluaran riset TPB 13 pada 2024-2025
SDG 13 research output 2024-2025

4.310

sitasi riset TPB 13 pada 2020-2025
SDG 13 research citations 2020-2025

HKI dan Paten UI untuk Penanganan Perubahan Iklim

Pada 2024, UI menghasilkan 20 Hak Kekayaan Intelektual (HKI) dan 1 paten yang berfokus pada penguatan ketangguhan bencana, adaptasi iklim, dan pengelolaan sumber daya air. HKI dan paten ini mencakup pengembangan kapasitas kader tanggap bencana (KATAPENA), modul mitigasi longsor dan praktik reboisasi, program edukasi dan simulasi mitigasi bencana untuk komunitas dan kawasan wisata, sistem pemanenan air hujan terintegrasi dengan hidroponik, analisis mikroklimat dan pulau panas perkotaan, peta kedalaman perairan dangkal berbasis satelit, serta pendekatan baru pengelolaan hujan. Sementara itu, paten yang dihasilkan berupa pembakar sampah tanpa asap dengan teknologi *spinning fire*.

Koleksi HKI dan paten ini menunjukkan peran UI dalam memperkuat ketahanan komunitas dan menyebarkan praktik berkelanjutan yang aplikatif untuk menghadapi risiko lingkungan dan bencana.

UI's IPRs and Patent for Climate Action

In 2024, UI produced 20 Intellectual Property Rights (IPRs) and 1 patent, all of which focused on strengthening disaster resilience, climate adaptation, and water resource management. These IPRs cover development of disaster response cadre capacity (KATAPENA), landslide mitigation and reforestation modules, community and tourism-area disaster education and simulation programs, an integrated rainwater harvesting and hydroponics system, urban microclimate and heat-island analysis, satellite-derived shallow water depth mapping, and new approaches to stormwater management; the patent covers a low-smoke waste incinerator using *Spinning Fire* technology.

This IPRs and patent collection demonstrates UI's role in bolstering community resilience and scaling practical, sustainable solutions to environmental and disaster risks.

Program Studi Terkait TPB 13
SDG 13-related Study Programs

Fakultas Matematika dan Ilmu Pengetahuan Alam Faculty of Mathematics and Natural Sciences	S1 Geografi/Geography	S2 Geografi/Geography	S3 Ilmu Geografi/Geography
	S1 Biologi/Biology	S2 Biologi/Biology	S3 Biologi/Biology
Sekolah Ilmu Lingkungan School of Environmental Science	S2 Ilmu Lingkungan/Environmental Studies	S2 Manajemen Bencana/Disaster Management	S3 Ilmu Lingkungan/Environmental Studies

Fakultas Teknik Faculty of Engineering	S1 Teknik Sipil/Civil Engineering	S2 Teknik Sipil/Civil Engineering	S3 Teknik Sipil/Civil Engineering
	S1 Teknik Elektro/Electrical Engineering	S2 Teknik Elektro/Electrical Engineering	S3 Teknik Elektro/Electrical Engineering
	S1 Arsitektur/Architecture	S2 Arsitektur/Architecture	S3 Arsitektur/Architecture
	S1 Teknik Lingkungan/Environmental Engineering	S2 Teknik Lingkungan/Environmental Engineering	Profesi Arsitektur/Architecture
	S2 Perencanaan Wilayah dan Kota/Urban and Regional Planning		
Fakultas Kesehatan Masyarakat Faculty of Public Health	S1 Kesehatan Lingkungan/Environmental Health		

Catatan/ Notes

S1 : Program Studi Sarjana/Bachelor's Degree Program
S2 : Program Studi Magister/Master's Degree Program

S3 : Program Studi Doktor/Doctoral Degree Program
Profesi : Program Pendidikan Profesi/Professional Degree Program

Kolaborasi UI dan Pemerintah Tangerang Perkuat Kesiapsiagaan Bencana

Sebagai wujud kontribusi UI terhadap ketahanan kesehatan dalam menghadapi dampak iklim, Fakultas Kedokteran (FK) UI, bersama Dinas Kesehatan dan RSUD Kabupaten Tangerang, mengambil langkah nyata untuk mengadakan **Pelatihan Mitigasi Bencana**.

Pada 23 Juli 2024, sebanyak 47 tenaga kesehatan dari 22 puskesmas dan 7 rumah sakit mengikuti pelatihan yang membekali mereka dengan keterampilan pra-rumah sakit dan berbasis rumah sakit, termasuk penanganan massal korban dan evakuasi. Inisiatif ini menjadi fondasi penting dalam membangun sistem respons bencana yang cepat, terstruktur, dan terpadu, sekaligus memperkuat kapasitas lokal dalam menghadapi situasi darurat yang semakin kompleks akibat perubahan iklim.

UI and Tangerang Government Collaborate to Strengthen Disaster Preparedness

As part of UI's contribution to strengthening health resilience in the face of climate impacts, the Faculty of Medicine (FK UI), in collaboration with the Tangerang District Health Office and Regional General Hospital (RSUD), took concrete steps to organize a **Disaster Mitigation Training**.

On July 23, 2024, a total of 47 healthcare workers from 22 community health centers and 7 hospitals participated in the training, which equipped them with both pre-hospital and hospital-based emergency response skills, including mass casualty management and evacuation procedures. This initiative serves as a critical foundation for building a rapid, structured, and integrated disaster response system, while also enhancing local health capacity to address increasingly complex emergencies driven by climate change.

Gambar 13.5 Pelatihan Mitigasi Bencana di Kabupaten Tangerang
Figure 13.5 Disaster-Mitigation Training in Tangerang Regency