

# Driving Sustainability in Asia: Regulatory Measures, Global Market Influence, and the Role of Life Cycle Assessment

Presented by:

**Jessica Hanafi, PhD**  
PT Life Cycle Indonesia

Chairwoman of ProLCAS (Indonesian Association of Life Cycle Assessment and Sustainability Professionals) - [www.prolcas.org](http://www.prolcas.org)

Working Group member of:

- ISO/TC 207/SC 3 - Environmental Labelling
- ISO/TC 207/SC 5 Life Cycle Assessment
- ISO/TC 207/SC 7 GHG management
- ISO/TC 323 Circular Economy





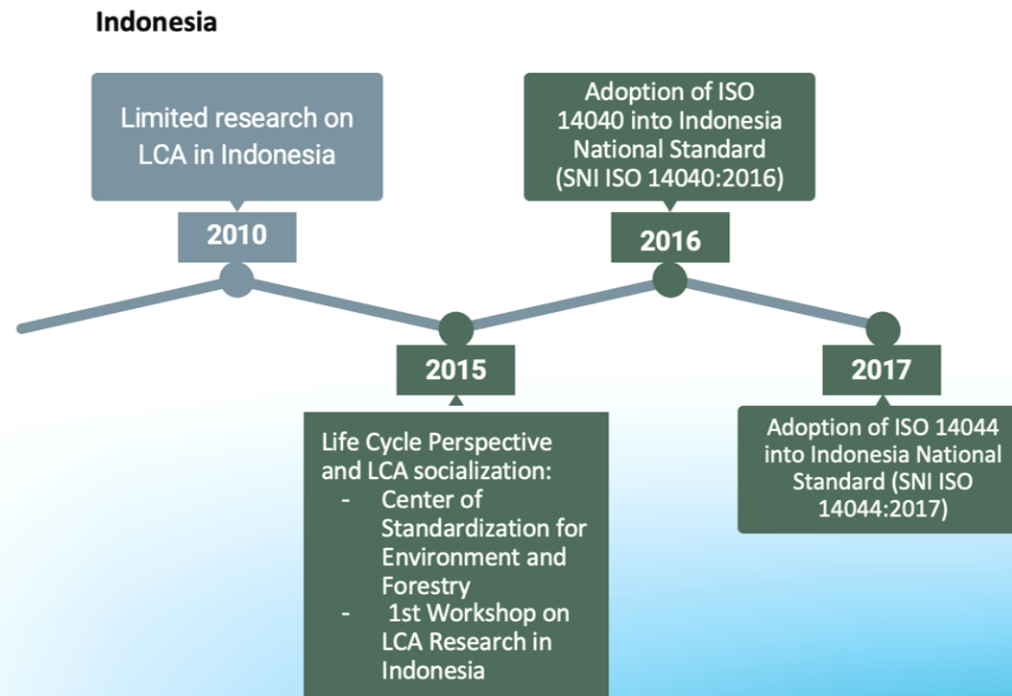
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PROPER Pro-LCAS

# Journey of LCA Implementation in Indonesia

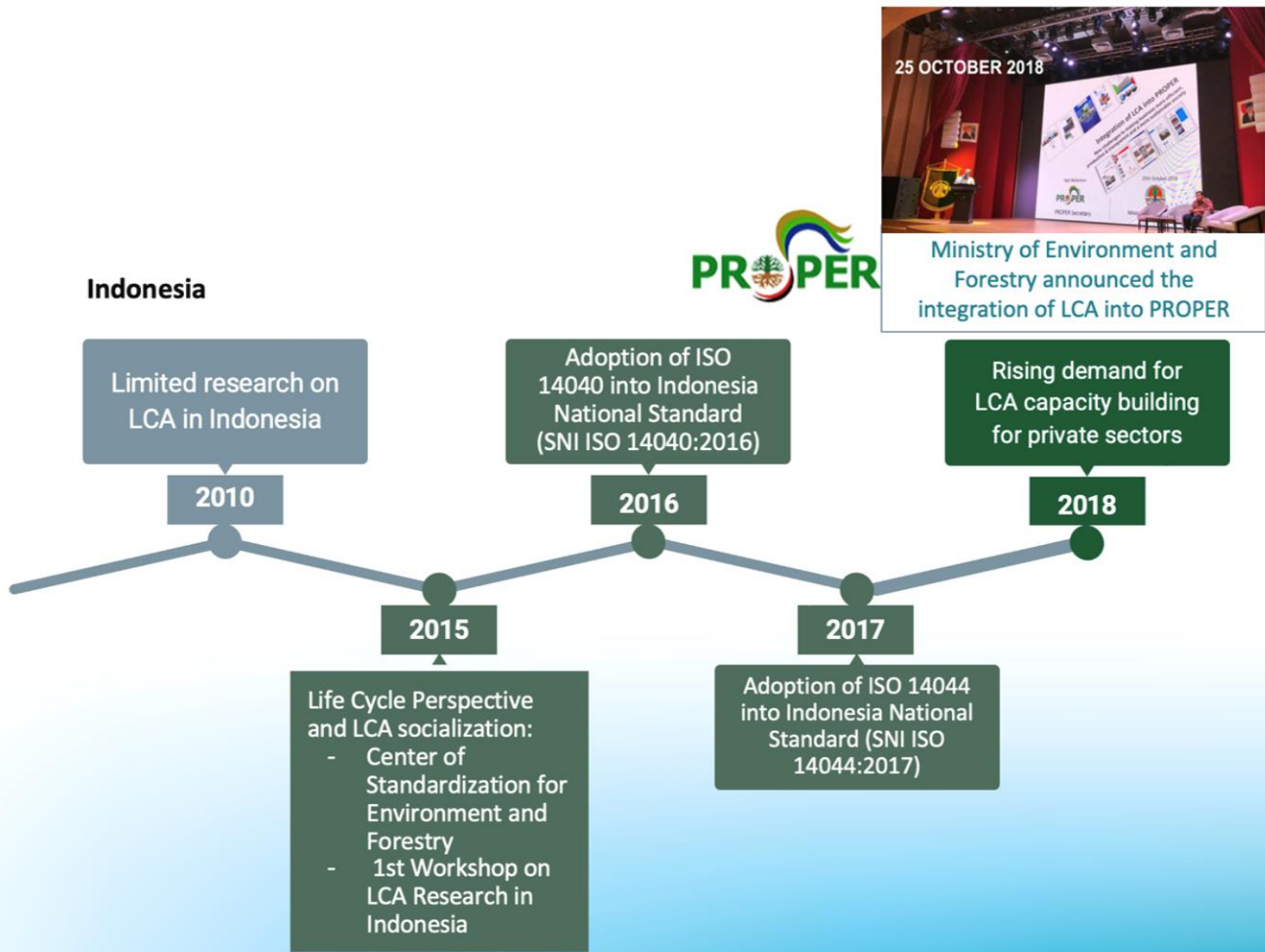
2021- Directorate General of Pollution and Environmental Degradation Control  
Ministry of Environment and Forestry - Republic of Indonesia





# Journey of LCA Implementation in Indonesia

2021- Directorate General of Pollution and Environmental Degradation Control  
Ministry of Environment and Forestry - Republic of Indonesia





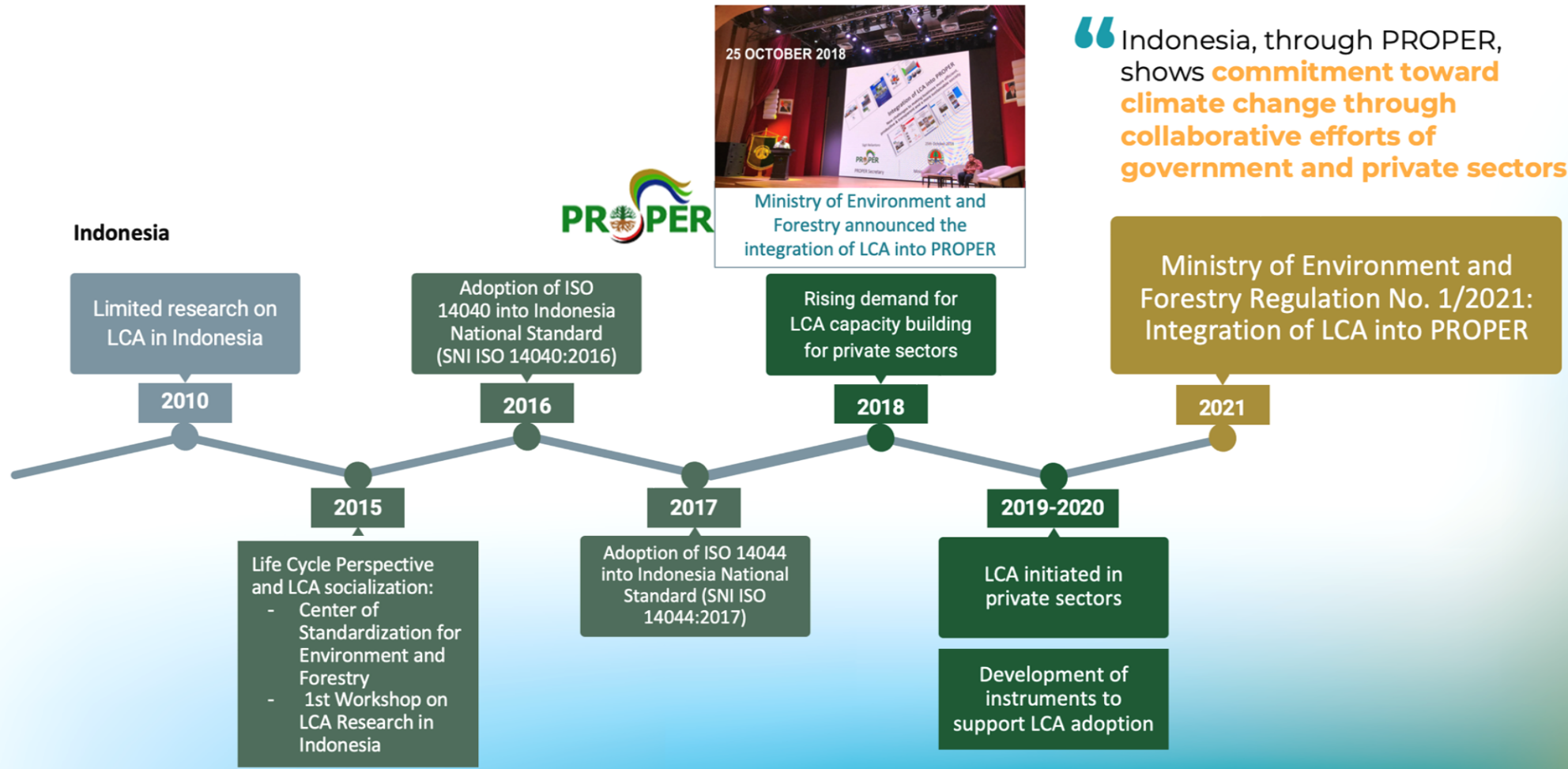
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# Journey of LCA Implementation in Indonesia

2021- Directorate General of Pollution and Environmental Degradation Control  
Ministry of Environment and Forestry - Republic of Indonesia



“Indonesia, through PROPER, shows **commitment toward climate change through collaborative efforts of government and private sectors**”



**PROPER** Pro-LCAS

03 November 2021

# National Adoption of Life Cycle Assessment in PROPER towards Sustainable Indonesia

Indonesia Pavilion COP 26 UNFCCC, Glasgow  
B5. PROPER's Highlight: Year 2020 Industrial Performance and Beyond

**Jessica Hanafi, PhD**

Founder/Chairwoman

Indonesian Association of Life Cycle Assessment and Sustainability Professionals (Pro-LCAS)

[www.prolcas.org](http://www.prolcas.org)



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Ministry of Environment and Forestry - Republic of Indonesia



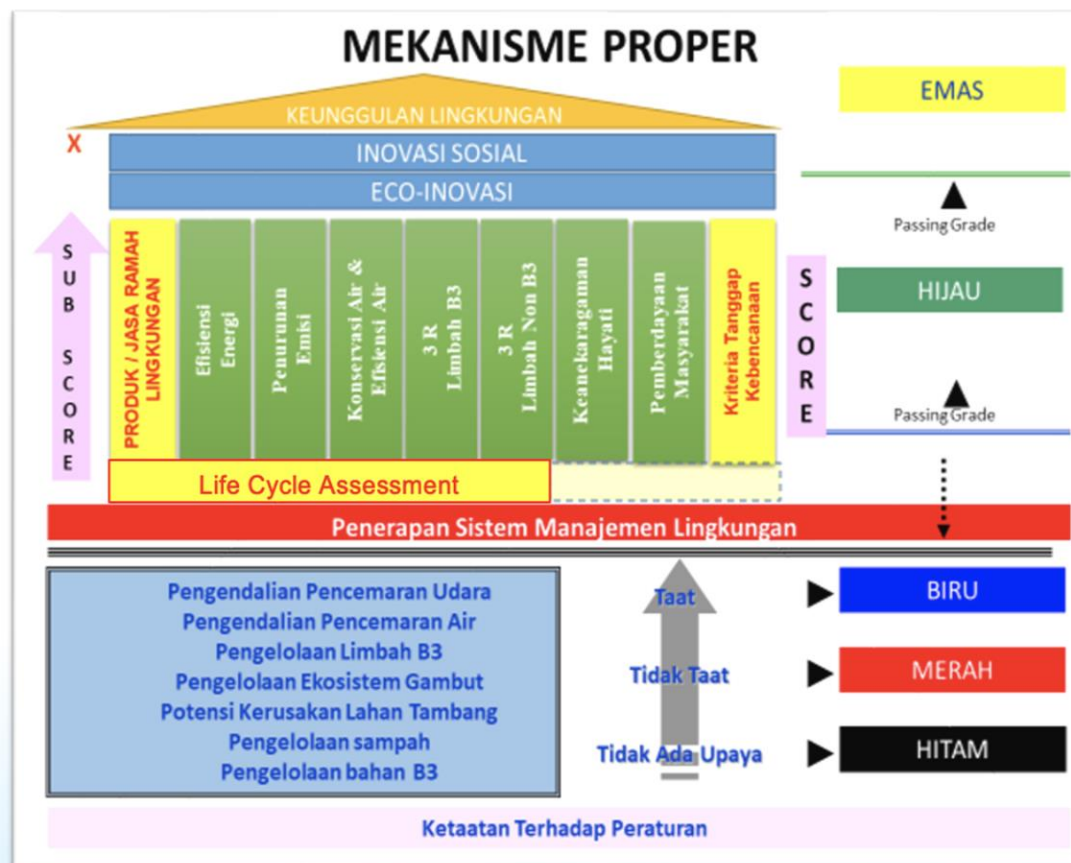
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# National Adoption of Life Cycle Assessment through Ministry of Environment and Forestry Regulation No. 1/2021

2021- Directorate General of Pollution and Environmental Degradation Control  
Ministry of Environment and Forestry - Republic of Indonesia



- ✓ Company Policy
- ✓ Governance
- ✓ Technical capacity
- ✓ Strategy and planning
- ✓ Implementation of LCA
- ✓ National inventory database preparation
- ✓ Environmental labelling (including Environmental Product Declaration)
- ✓ Quantitative Impact-based environmental improvement (based on LCA results)



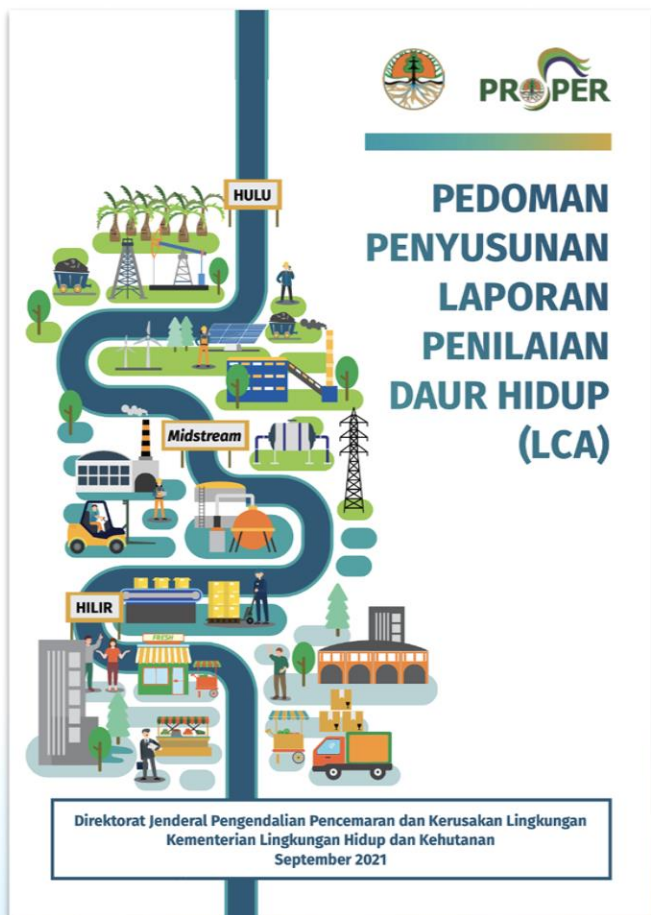
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**PROPER** Pro-LCAS

# PROPER LCA Report Guidelines

2021- Directorate General of Pollution and Environmental Degradation Control  
Ministry of Environment and Forestry - Republic of Indonesia



- ✓ Based on SNI ISO 14040 and 14044
- ✓ **Practical guidelines** to help reduce choices and ambiguities
- ✓ Provide a **structured format** to help companies in reporting



# EPD in Indonesian Environmental Performance Rating

## Environmental Labelling



2021 - Directorate General of Pollution and Environmental Degradation Control  
Ministry of Environment and Forestry - Republic of Indonesia



“ Encourage companies to publish their Environmental Product Declaration ”

**EPD**  
THE INTERNATIONAL EPD SYSTEM

Environmental Product Declaration  
In accordance with ISO 14025 for:

**DAUN BUAH™  
GRANULATED UREA**

From  
**PT Pupuk Kalimantan Timur**  
**PUPUK KALTIM**



Programme  
The International EPD® System,  
www.environdec.com

EPD registered through the fully  
aligned regional hub  
EPD Southeast Asia,  
www.epd-southeastasia.com

Programme operator  
EPD International AB

Regional Hub  
EPD Southeast Asia

EPD registration number  
S-P-04685

Publication date  
2021-10-22

Valid until  
2025-10-21

An EPD should provide current information, and may be updated if conditions change. The standard validity is therefore subject to the continued registration and publication at www.environdec.com

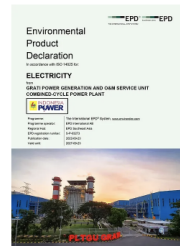
<https://www.environdec.com/>  
<https://www.epd-southeastasia.com/>

EPD Portal

**EPD List**

Search EPDs within the International EPD System, or browse EPD South East Asia database. All EPDs are free to download. [Visit EPD International](#)

All    Indonesia    Malaysia    Thailand



**Electricity from Grati Power Generation and O&M Service Unit Combined-Cycle Power Plant**

Registration Number : S-P-03273


| Registration Date | Valid Until Date | Geographical Scope | Environdec QR Code |
|-------------------|------------------|--------------------|--------------------|
| 23/09/2022        | 23/09/2027       | Indonesia          |                    |

**Company Information**

Company Name : PT Indonesia Power  
Country of Origin : Indonesia  
Website : <https://www.indonesiapower.co.id>

[Environdec Page](#)

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**Structural Steel Welded I-Section**

Registration Number : S-P-04682


| Registration Date | Valid Until Date | Geographical Scope                | Environdec QR Code |
|-------------------|------------------|-----------------------------------|--------------------|
| 22/02/2022        | 22/02/2027       | Indonesia, Australia, New Zealand |                    |

**Company Information**

Company Name : PT Gunung Raja Paksi Tbk  
Country of Origin : Indonesia  
Website : <https://www.gunungrajapaksi.com/>

[Environdec Page](#)

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**Hot Rolled Sheet Coil Plate**

Registration Number : S-P-04683



# Developed PCR



Motivate sectors to  
**develop Product  
Category Rules**



**EPD**  
THE INTERNATIONAL EPD SYSTEM

Contact EPD Library PCR Library Search EPD Portal

## Participate in PCR Development

In all PCR development steps, we not only depend on individuals and organisations that have LCA and project management expert skills, we also highly depend on market/industry experts. The PCR moderators warmly invite you to share your expertise when creating and shaping our future PCRs.

To get involved, please contact the Secretariat for guidance.

[Contact EPD Secretariat](#)

PCR Development

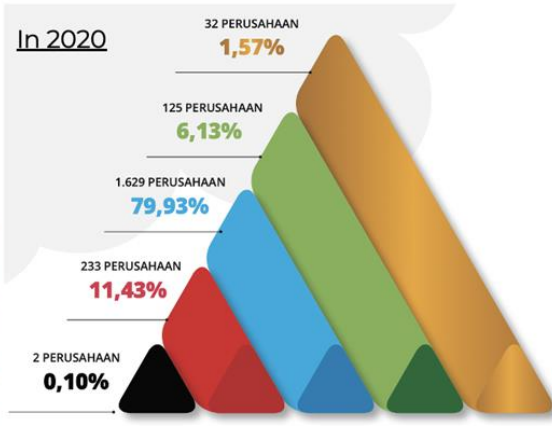
**EPD**

PRODUCT CATEGORY RULES (PCR)  
DATE: 2023-05-19  
CRUDE PETROLEUM AND NATURAL GAS  
PRODUCT CATEGORY CLASSIFICATION: UN CPC 120

2023-05  
VERSION 1.0, 2023-06-19  
VALID UNTIL: 2027-06-19

### 2.1 ADMINISTRATIVE INFORMATION

|  |   |
|--|---|
| Name:                                  | Crude Petroleum and Natural Gas   |
| Registration number and version:       | 2023-05, Version 1.0  |
| Programme:                             | <b>EPD</b><br>The International EPD® System   |
| Programme operator:                    | EPD International AB, Box 210 60, SE-100 31 Stockholm, Sweden.<br>Website: <a href="http://www.environdec.com">www.environdec.com</a><br>E-mail: <a href="mailto:info@environdec.com">info@environdec.com</a> |
| PCR Moderator:                         | Jessica Hanafi, Life Cycle Indonesia, <a href="mailto:jessica.hanafi@lifecycleindonesia.com">jessica.hanafi@lifecycleindonesia.com</a>  |
| PCR Committee:                         | Indonesia Petroleum Association (IPA), Life Cycle Indonesia   |
| Date of publication and last revision: | 2023-06-19 (Version 1.0)  |
| Valid until:                           | 2027-06-19  |



In 2021  
**2642** companies  
 Participated

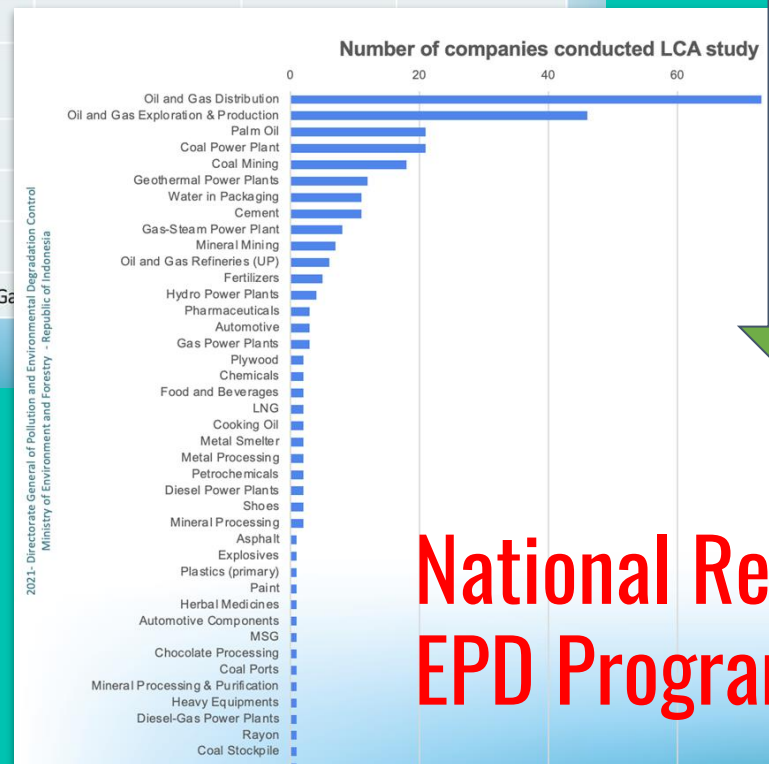
**435** company candidates for Green  
 PROPER 2020-2021

**46** industrial sectors

# PROPER Companies

## INDUSTRY SECTORS of GREEN CANDIDATES

|                            |                            |                     |                |                    |
|----------------------------|----------------------------|---------------------|----------------|--------------------|
| Oil and gas extraction     | Aluminium Processing       | Cement              | Feed Mills     | Water in packaging |
| Oil and gas distribution   | Smelter                    | Asphalts            | Slaughterhouse | Food and beverages |
| Petrochemical – Fertilizer | Steel mills                | Paint manufacturers | Dairy          | Pharmaceutical     |
| Petrochemical – plastics   | Steel manufacturers        | Plywood             | Pulp and Paper | Herbal medicines   |
| Chemicals                  | Pipes and steel equipments |                     |                |                    |
| Coal ports                 | Metal coating              |                     |                |                    |
| Coal mining                | Waste treatment operators  |                     |                |                    |
| Mineral mining             | Industrial Parks           |                     |                |                    |
| Tin mining                 | Explosives                 |                     |                |                    |
|                            | Power plants (Diesel, Gas) |                     |                |                    |



# Potential EPD Demand



## Industry Sectors conducted LCA studies

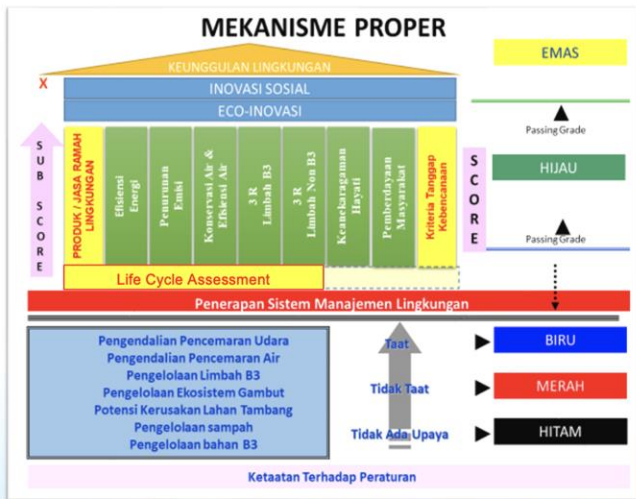
In 2021  
**289** companies conducted LCA

# National Registry for EPD Programme Operators



## National Adoption of Life Cycle Assessment through Ministry of Environment and Forestry Regulation No. 1/2021

2021 - Directorate General of Pollution and Environmental Degradation Control  
Ministry of Environment and Forestry - Republic of Indonesia



- ✓ Company Policy
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**giz** Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Kick Off Meeting - Pusfaster Meeting Room, 8th Floor, Manggala Wanabakti Blok VII  
22<sup>nd</sup> June 2023

## Development of National Registration System for Environmental Product Declaration (EPD) Programme Operators

Presented by:  
**Jessica Hanafi, PhD**  
PT Life Cycle Indonesia

Working Group member of:

- ISO/TC 207/SC 3 - Environmental Labelling
- ISO/TC 207/SC 5 Life Cycle Assessment
- ISO/TC 207/SC 7 GHG management
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www.lifecycleindonesia.com

# Sustainability in Public Policy



**Zero Waste Masterplan to Achieve a Sustainable, Resource-Efficient and Climate-Resilient Singapore**

**Our Targets**

- 1 Extend Semakau Landfill's lifespan beyond 2035
- 2 Reduce amount of waste sent to landfill per capita per day by 30% by 2030
- 3 By 2030, achieve a 70% overall recycling rate: 81% non-domestic recycling rate, 30% domestic recycling rate

**STRENGTHENING THREE RESILIANCES**

**Climate Resilience**  
Address existential threats of climate change especially rising sea levels

**Resource Resilience**  
Ensure safe and secure supply of critical resources like food and water

**Economic Resilience**  
Ensure the future Singapore economy remains competitive by overcoming carbon and resource constraints

To achieve this, we will adopt a circular economy approach.

**GOVERNMENT TAKING THE LEAD**

Three Priority Waste Streams

- Food waste
- E-waste
- Packaging waste, including plastics

**Resource Sustainability Act**  
Mandatory packaging reporting in 2020  
Extended Producer Responsibility for e-waste by 2021  
Mandatory food waste segregation for treatment from 2024

Extended Producer Responsibility for packaging, including plastics, from 2025

**PUSHING BOUNDARIES THROUGH RESEARCH AND INFRASTRUCTURE**

**Pneumatic Waste Conveyance Systems**  
TuasOne Waste-to-Energy Incineration Plant  
Pilot Mechanical Biological Treatment facility

**Tuas Nexus**  
Comprising integrated Waste Management Facility and Tuas Water Reclamation Plant to harness synergies across the water-waste-energy nexus

**NEWSand**  
Use of Innovation before and in construction materials

**\$45 million R&D initiative**  
8 projects worth \$45 million across \$20 million funded by 2023

**\$25 million Waste-to-Energy Programme**  
Package worth \$25 million  
Waste-to-Energy Research Facility

**TRANSFORMING THE ENVIRONMENTAL SERVICES INDUSTRY**

More than 2,000 firms  
30,000 workers to benefit from the Environmental Services Industry Transformation Map by 2025

Gov-PACT Innovation calls  
Regulatory Sandbox  
INCUBATE partnership

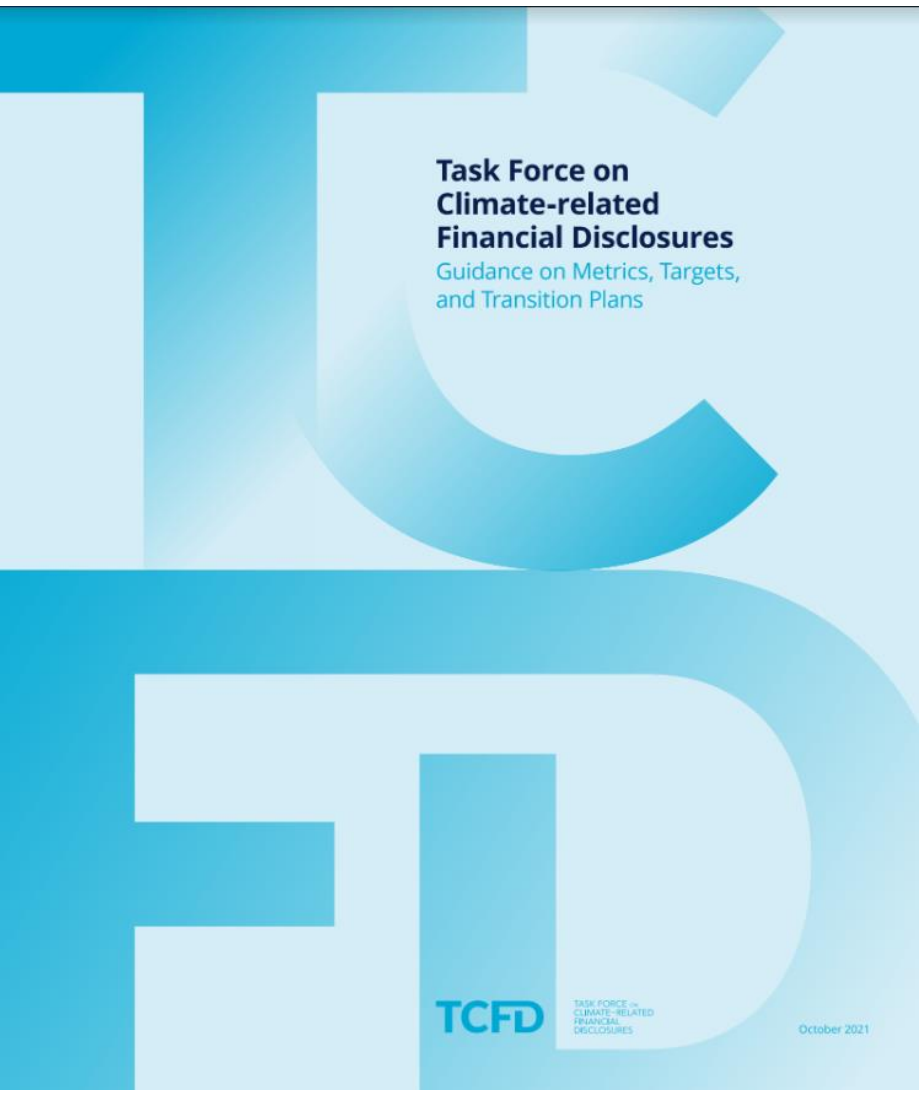
**\$30 million Productivity Solutions Grant (PSG)**  
Regulatory Sandboxes  
INCUBATE partnership

**CO-CREATING SOLUTIONS WITH THE COMMUNITY**

**#RecycleRight campaign**  
New design for recycling bin labels  
Citizens' Workgroup on household recycling

More than 250 companies consulted  
Over 5,000 households surveyed on recycling  
More than 1,300 people participated in public consultation

# Carbon Disclosure Requirements



From FY2022



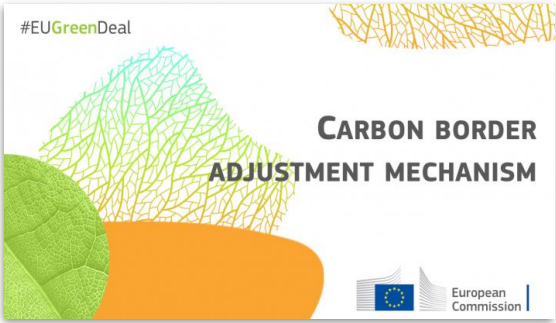
requires issuers from all sectors to make disclosures based on TCFD (Comply/Explain).

FY2023 becomes mandatory.

SR



# Getting ready for Carbon Tax and Carbon Market



REUTERS World Business Markets Sustainability Legal Breakingviews Technology Invest

## Indonesia plans to launch carbon exchange in H2 2023

Reuters May 5, 2023 9:30 PM GMT+10 · Updated 2 months ago



Smoke and steam billows from the coal-fired power plant owned by Indonesia Power, next to an area for Java 9 and 10 Coal-Fired Steam Power Plant Project in Surabaya, Banten province, Indonesia, July 11, 2020. Picture taken July 11, 2020. REUTERS/Willy Kurniawan

JAKARTA, May 5 (Reuters) - Indonesia plans to launch a carbon exchange in the second half of this year, its financial regulator said on Friday, as part of efforts to boost renewable energy use and achieve net-zero emissions by 2060.

Southeast Asia's largest economy is one of the world's biggest carbon emitters and wants to cut its emissions by more than 30% by 2030.

"We are preparing [to launch] the carbon exchange...to support the early retirement of coal fired power plants," Mahendra Siregar, the country's financial services authority (OJK) chief, said in a press conference on Friday.

FINANCIAL TIMES

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Carbon trading + Add to myFT

### Singapore launches carbon exchange despite market's greenwashing scandals

City-state bets on industry's growth as global leaders confront climate change

The Climate Impact X exchange is a joint venture that includes the Singapore Exchange © Ore Huiying/Bloomberg

Mercedes Ruehl in Singapore JUNE 8 2023

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Singapore's new carbon exchange traded 12,000 tonnes of emissions on its first trading day as the city-state bets on the growth of an industry that has been slammed for corporate greenwashing.

Chevron, Vitol, Standard Chartered and China's CICC on Wednesday traded credits on Climate Impact X, which is hoping to challenge other global exchanges run by US-based CME Group and Xpansiv in establishing a benchmark price for voluntary carbon trading.

Singapore is trying to leverage its status as a business hub in Asia to be the main carbon trading platform in the region. By winning enough liquidity from international carbon traders, it hopes to become a global price setter for carbon credits and lay the groundwork for an eventual futures market.

VIETNAM BRIEFING

Economy & Trade Industries Tax & Accounting Legal & Regulatory HR & Payroll

## Vietnam's Carbon Market: Progress Report

March 30, 2023 Posted by Vietnam Briefing Written by Binh Truong Reading Time: 5 minutes

Vietnam is making significant progress towards creating a carbon trading market, aiming to fulfill its COP26 commitments to reduce emissions and leverage the economic benefits associated with carbon markets. Here's an overview of Vietnam's efforts in establishing its own market.

During COP26, Vietnam made a commitment to attain net-zero carbon emissions by 2050, with a carbon market being touted as one of the most efficient strategies to achieve this objective.

Carbon markets raise the cost of carbon emissions, resulting in increased business expenses. This should motivate companies to reduce their environmental impact to improve bottom-line growth.

Further, carbon trading can generate economic advantages for the national economy. The global carbon credits market exceeded US\$909 billion last year, with permits exchanged for 12.5 billion tons of carbon.

Direktorat Jenderal Pengendalian Perubahan Iklim

DITJEN PPI KEMENTERIAN LINGKUNGAN HIDUP DAN KEHUTANAN REPUBLIK INDONESIA

Beranda Tentang Kami Program Direktorat Berita Galeri BPPMKHL Kebijakan & Dokumen Biroplan IKLIM NFP

IGER (INDONESIA CERTIFIED EMISSION REDUCTIONS) DOKUMEN PERUBAHAN IKLIM REDD+

Beranda / Dari Media / Carbon tax for Indonesia: Time to act now

### Carbon tax for Indonesia: Time to act now

http://www.thejakartapost.com/news/2014/04/29/carbon-tax-indonesia-time-act-now.html

Moreover, the cost of inaction will be too high to handle and will place an overwhelming burden on future generations. There is a wide range of policy instruments that countries can use to lower their emissions and ultimately shift from a fossil fuel-based to low-carbon economy. To achieve environmental excellence, both command and control (regulatory) approaches and market instruments such as taxation and incentives are necessary.

Regulations can be effective to determine the direction and set national targets. However, unlike market instruments, regulatory approaches do not consider cost-effectiveness of emission reduction measures and therefore can be very costly. A carbon tax is a possible solution although it is not perfect. A carbon tax is one imposed on the carbon content of fossil fuel. It is based on the notion that charging polluters based on how much they pollute will result in behavioral change toward greener practices.

# Challenge

- LCA professionals
- EPD Verifiers



KEMENTERIAN LINGKUNGAN HIDUP DAN KEHUTANAN  
BADAN PENYULUHAN DAN PENGEMBANGAN SDM  
PUSAT PERENCANAAN PENGEMBANGAN SDM

KEPUTUSAN  
KEPALA PUSAT PERENCANAAN PENGEMBANGAN SUMBER DAYA MANUSIA  
NOMOR: SK.1b/REN/PPM/SDM-11/02/2023

TENTANG  
TIM PELAKSANA KEGIATAN PERUMUSAN DAN VERIFIKASI  
RANCANGAN STANDAR KOMPETENSI KERJA NASIONAL INDONESIA  
PENILAIAN DAUR HIDUP (*LIFE CYCLE ASSESSMENT*)

DENGAN RAHMAT TUHAN YANG MAHA ESA,

KEPALA PUSAT PERENCANAAN PENGEMBANGAN SUMBER DAYA MANUSIA

- Menimbang :
- bahwa dalam Pasal 16 Peraturan Menteri Lingkungan Hidup dan Kehutanan Nomor 1 Tahun 2021 tentang Program Penilaian Peringkat Kinerja Perusahaan dalam Pengelolaan Lingkungan Hidup (*PROPER*), salah satu penilaian *PROPER* dilakukan terhadap kinerja pengganggu jawab usaha dan/atau lingkungan yang melebihi ketaatan yang diwajibkan dalam peraturan perundang-undangan meliputi pelaksanaan penilaian daur hidup (*Life Cycle Assessment*);
  - bahwa untuk melaksanakan penilaian daur hidup (*Life Cycle Assessment*) dibutuhkan praktisi LCA yang kompeten berdasarkan Standar Kompetensi Kerja Nasional Indonesia (*SKKNI*);
  - bahwa untuk melaksanakan pasal 8 Peraturan Menteri Ketenagakerjaan Republik Indonesia Nomor 3 Tahun 2016 tentang Tata Cara Pencapaian Standar Kompetensi Kerja Nasional Indonesia, perlu menetapkan tim perumus dan verifikasi Standar Kompetensi Kerja Nasional Indonesia Penilaian Daur Hidup (*Life Cycle Assessment*);
  - bahwa mempertimbangkan huruf a dan b perlu ditetapkan tim perumus dan verifikasi Rancangan Standar Kompetensi Kerja Nasional Indonesia Penilaian Daur Hidup (*Life Cycle Assessment*) melalui Keputusan Kepala Pusat Perencanaan Pengembangan Sumber Daya Manusia.

- Mengingat :
- Undang-Undang Nomor 13 Tahun 2003 tentang Ketenagakerjaan (Lembaran Negara Republik Indonesia Tahun 2003 Nomor 39);

Draft of  
National Competency Standard  
for LCA Practitioners, Verifiers, &  
Executives

# Circular economy is not a new concept



## Measuring impact of circular economy IS new

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**IndonetWORK**.co.id

Home » Besi & Baja » Besi » Besi Tua

**Besi Tua**

Besi tua mungkin dikira an... Banyak pengepul besi yang m... distributor besi tua terlengkap... untuk menggunakan barang c... yang menjanjikan untuk ditek... perbulan. Namun, sayangnya... dipenuhi oleh pasokan impor

Bagikan

▼ Besi & Baja  
▼ Besi  
**Besi Tua**

**BERDASARKAN PROPINSI**

DKI Jakarta  
Jawa Timur

**BESI TUA**

Besi TuaPT Putra Madu Segar... bidang jasa pengangkutan lin...

Telepon WhatsApp

Besi TuaPT Putra Madu Segar... bidang jasa pengangkutan lin...

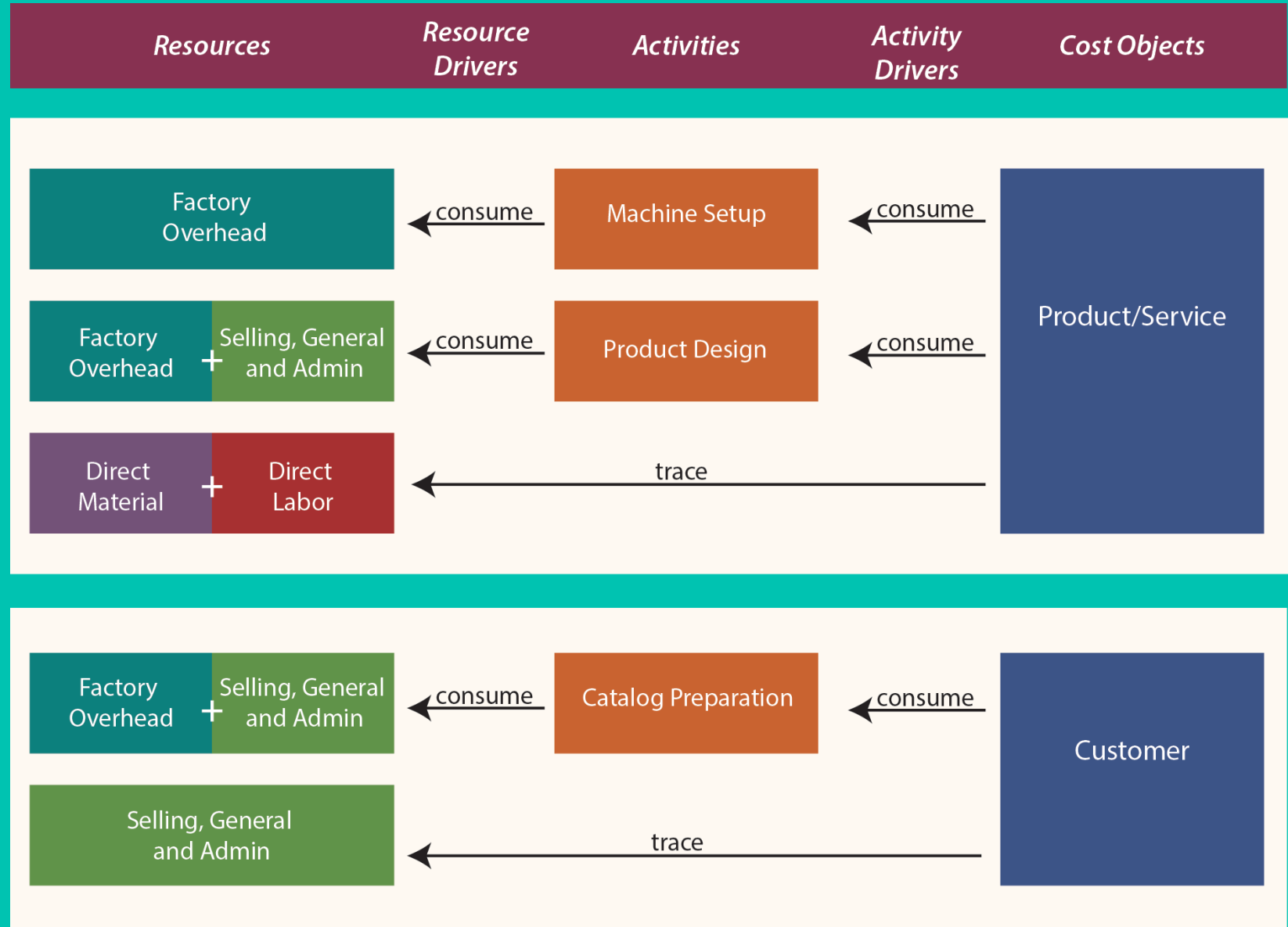
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Telepon WhatsApp



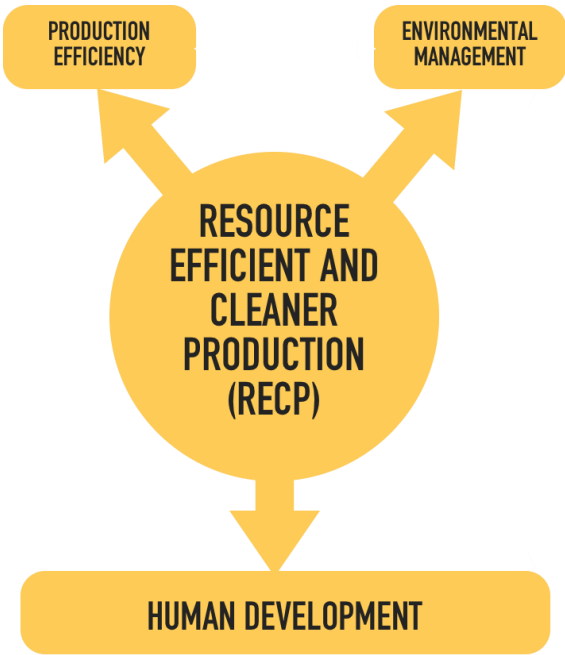
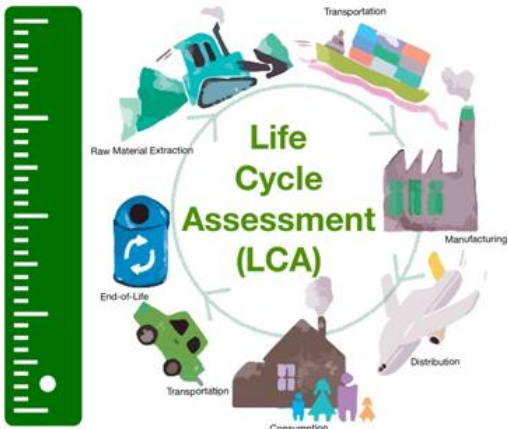
# How to make LCA as environmental accounting and to be as common as financial accounting



# LCI SUSTAINABILITY STRATEGY APPROACH



Putting the metrics behind Sustainability



Southeast Asia EPD  
EPD®  
THE INTERNATIONAL EPD® SYSTEM



SimaPro

KELARBOCS®

Basix Reporting  
Making Sustainability Reporting Easy

# Terima Kasih



**Contact us:**

[www.lifecycleIndonesia.com](http://www.lifecycleIndonesia.com)

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[admin@lifecycleindonesia.com](mailto:admin@lifecycleindonesia.com)

[Jessica.Hanafi@lifecycleIndonesia.com](mailto:Jessica.Hanafi@lifecycleIndonesia.com)

[David.Adiwijaya@lifecycleindonesia.com](mailto:David.Adiwijaya@lifecycleindonesia.com)