




POTENSI EKONOMI SIRKULAR DI INDONESIA

Umi Karomah Yaumidin, Ph.D

Research Centre for Behavioral and Circular Economics
National Research and Innovation Agency of
Republic Indonesia



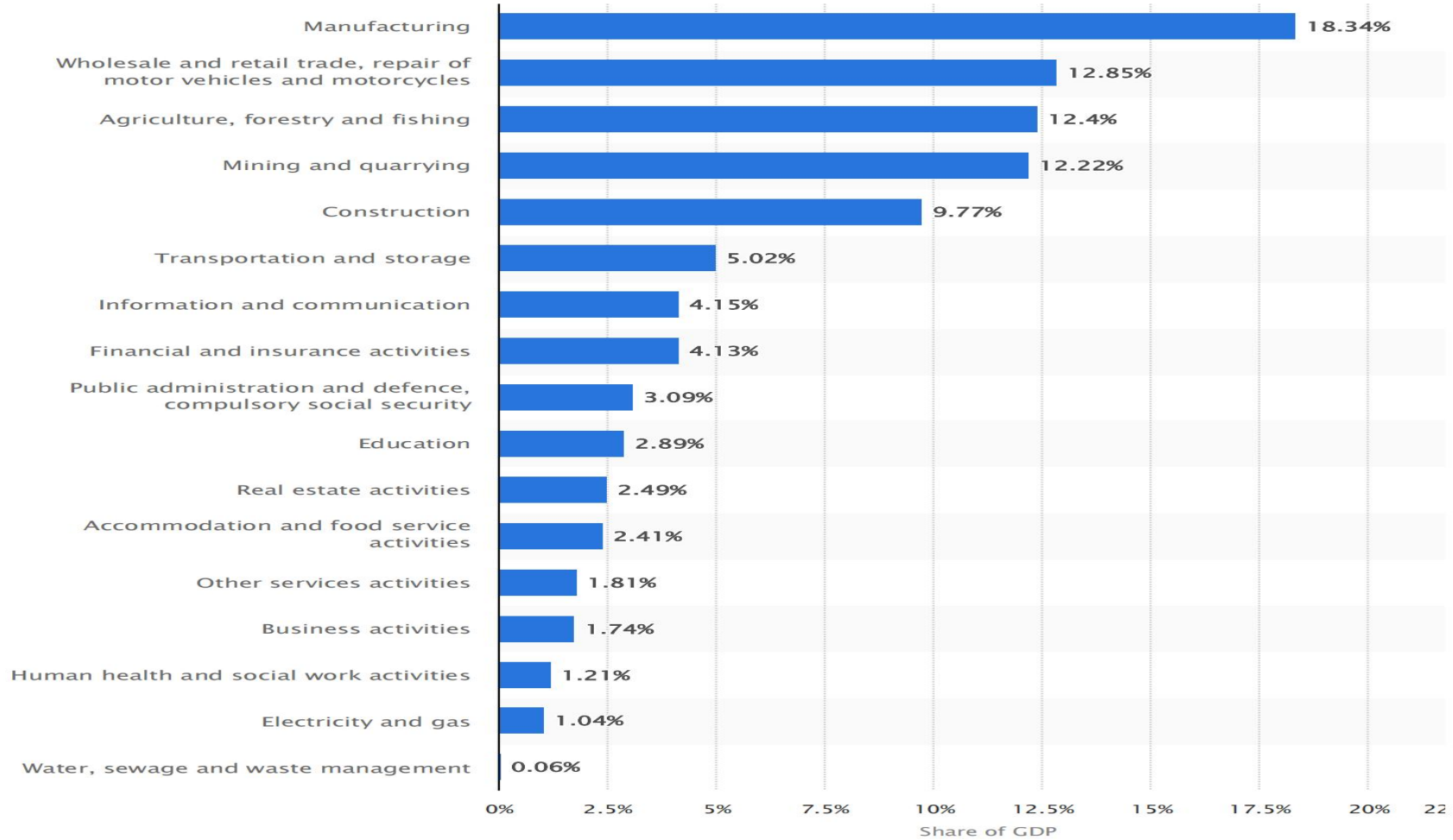
Disampaikan pada *Focus Group Discussion* Dewan Pakar Pusat Perhimpunan Periset Indonesia (PPI):
Strategi Kebijakan Pembangunan Nasional dan Insentif Fiskal di Bidang Ekonomi Sirkular
Selasa, 12 September 2023, Gedung Widya Graha - BRIN, Jakarta



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PDRB Menurut Sektor tahun 2022

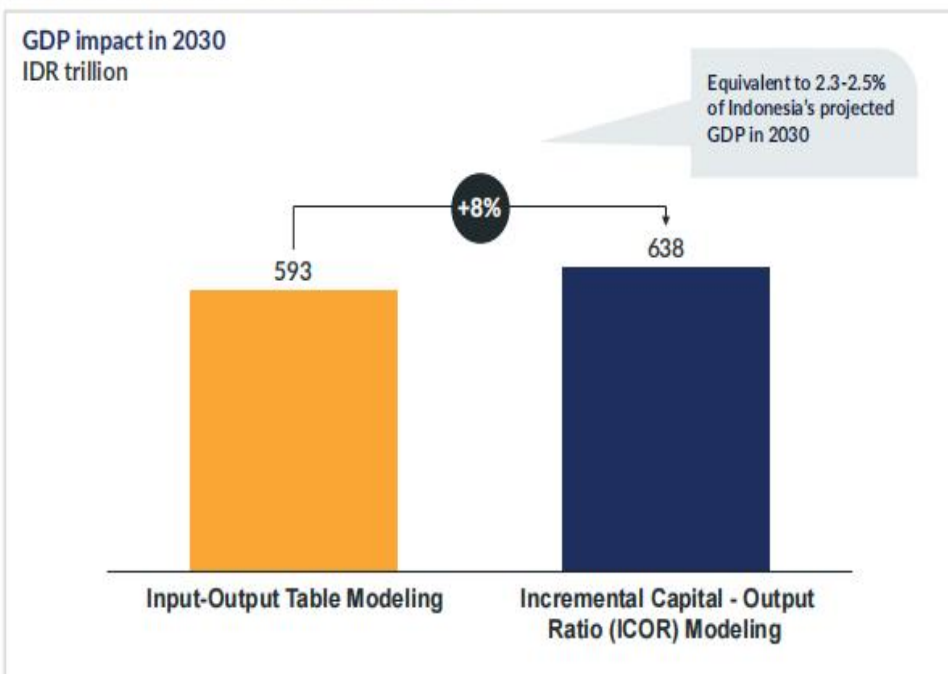
PROFESIONAL
OPTIMIS
PRODUKTIF



Sumber: BPS, 2023

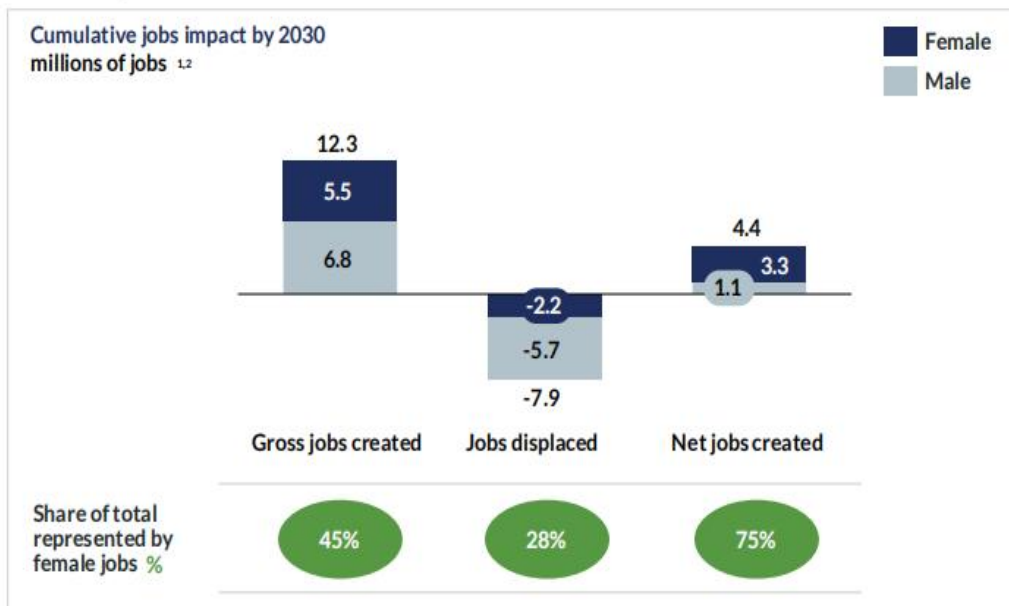
Peran Sirkular Ekonomi terhadap GDP

A circular economy could generate an additional economy-wide GDP impact of IDR593-638 trillion in 2030



SOURCE: BPS; Bank Indonesia; Ministry of Environment and Forestry; ADB; WRI; ITU, expert interviews (see annex for more details)

The circular economy could create 4.4 million net jobs by 2030, of which three-quarters could be for women

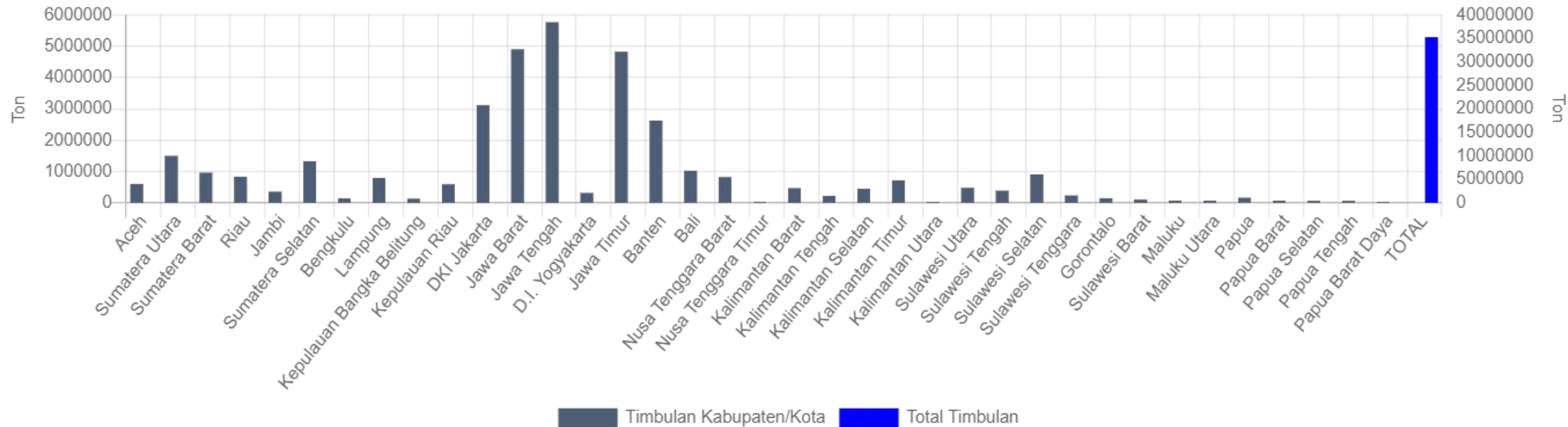


1. The total jobs in 2030 were calculated by growing the total jobs in Indonesia in 2019 with Indonesia's BAU labour force growth rate of 1.3% till 2030. The total jobs in 2030 are inclusive of the net jobs created by the circular economy in 2030
 2. To estimate the jobs created for women in 2030, it was assumed that the gender share of jobs in each sector in 2018 would remain unchanged till 2030. The data from the Labour Force Situation report published by BPS in February 2018 on the gender share of jobs in each of the 17 sectors of Indonesia's economy was used
 SOURCE: Bank Indonesia; BPS; World Bank; UN Population Division (see annex for more details)





Berapa besar potensi sirkular ekonomi di Indonesia?



Potensi timbulan sampah menurut kabupaten tahun 2022

Sumber: KLHK, 2023



Kontribusi sektor industri terhadap emisi gas rumah kaca

Populasi Industri Besar dan Sedang (IBS) Antarwilayah

- IBS > 5.000
- $1.000 \leq \text{IBS} \leq 5.000$
- $100 \leq \text{IBS} \leq 1.000$
- $\text{IBS} \leq 100$

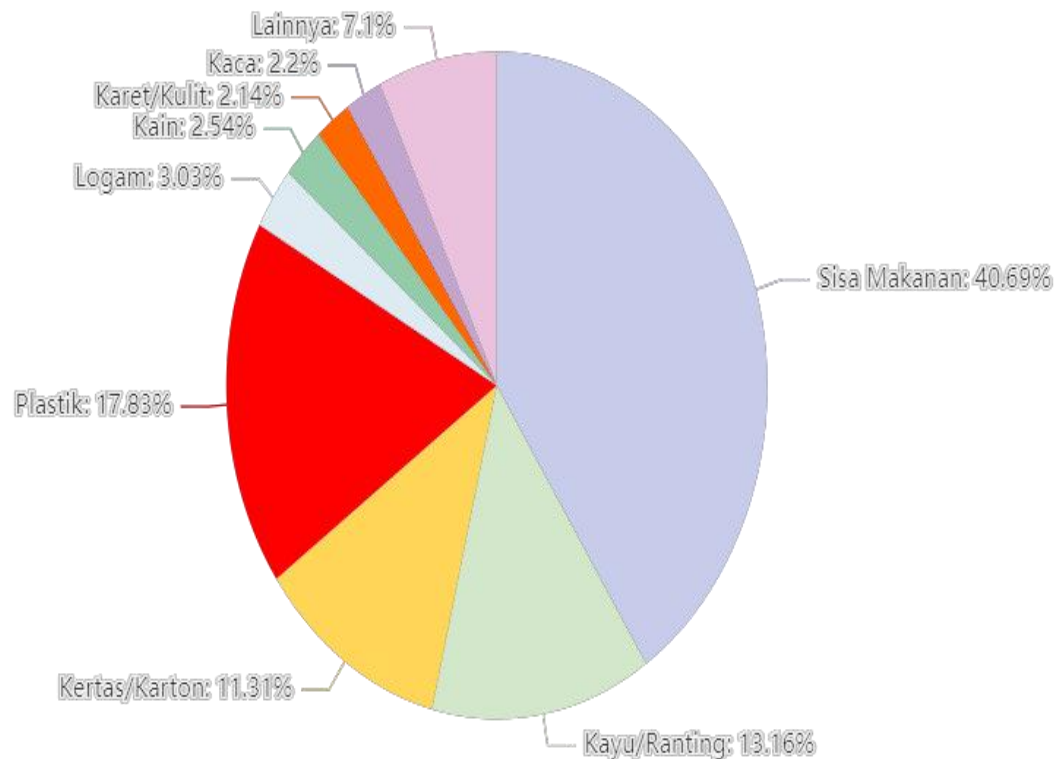


Kontribusi Emisi per Sektor

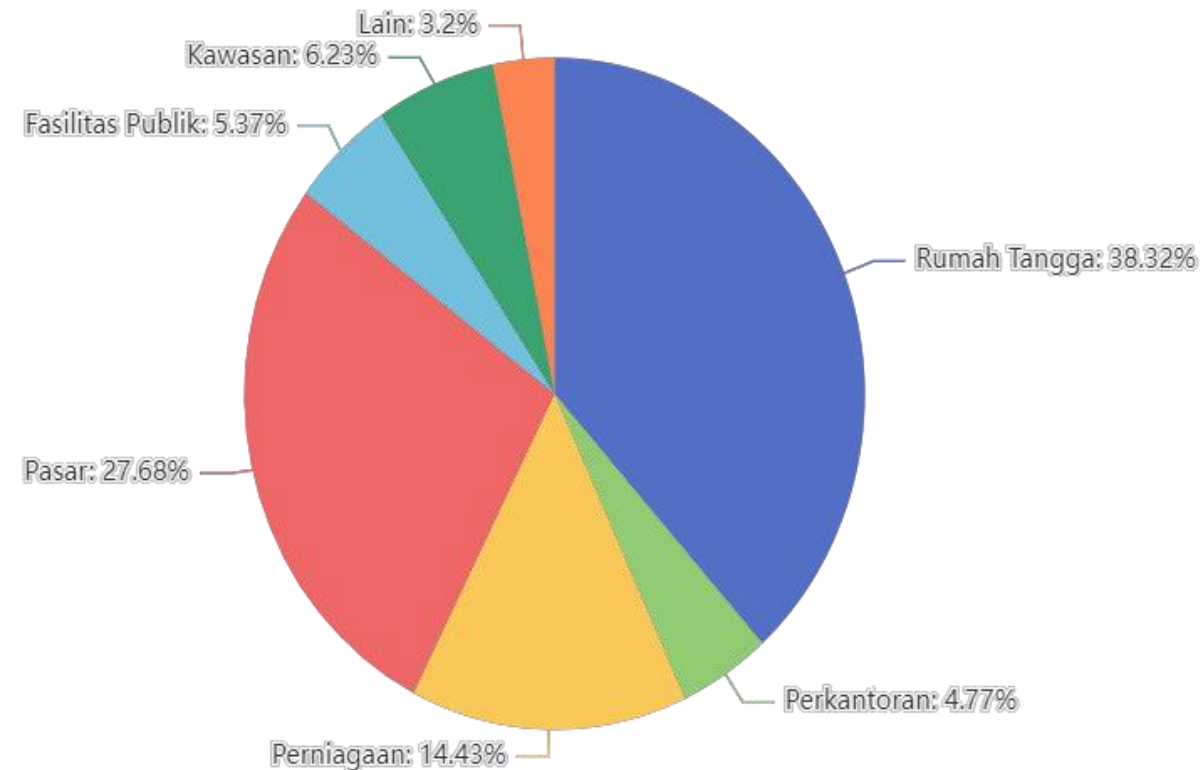


Berapa besar potensi sirkular ekonomi di Indonesia?

- Komposisi sampah berdasarkan jenisnya



- Komposisi sampah berdasarkan sumbernya



Sumber: KLHK, 2023



POTENSI LIMBAH/PRODUK SAMPINGAN

Potensi sampah yang dapat dihasilkan dari 45 kota besar di Indonesia mencapai 4 juta ton/tahun. Potensi gas metana yang bisa dihasilkan mencapai 11.390 ton CH₄ / tahun atau setara dengan 239.199 ton CO₂ / tahun, jumlah ini merupakan 64% dari total emisi sampah (Herlambang, 2010). Pembakaran sampah juga dapat menghasilkan gas rumah kaca, seperti CO₂, N₂O, NO_x, NH₃, dan karbon organik.



KELAPA SAWIT

- kebutuhan bahan bakar boiler dari cangkang sawit.
- kebutuhan energi listrik dari POME



KERTAS

Fenomena impor sampah kertas karena harganya lebih murah daripada dari dalam negeri.

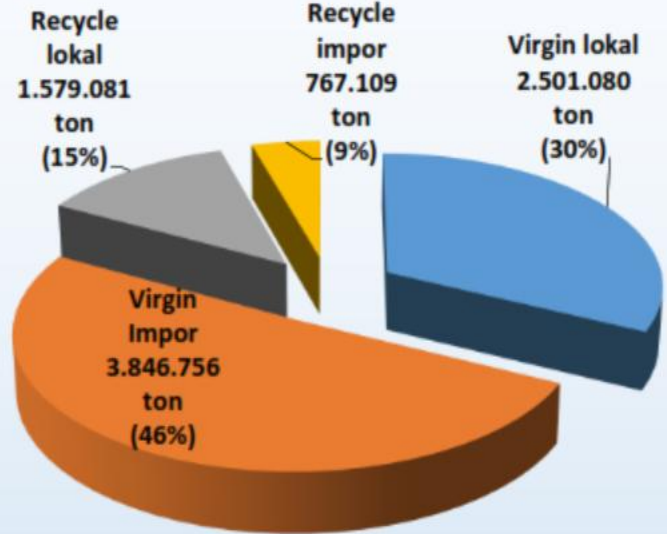





PLASTIK

Sampah kantong plastik Kota Jakarta sehari mencapai 1.000 ton. kebutuhan bahan baku bagi industri plastik nasional mencapai 5,6 juta ton per tahun.



KEBUTUHAN INDUSTRI PLASTIK NASIONAL



 <p>Tenaga Kerja: >3,4 Jt jiwa</p>	 <p>Jumlah Industri: >1.000 perusahaan</p>	 <p>Investasi: + Rp 7,15 T</p>
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Data Tahun 2021

Sumber : Kemenperind, Direktorat IKHF, 2021

KEBUTUHAN INDUSTRI DAUR ULANG PLASTIK NASIONAL

Total Kebutuhan Bahan Baku Plastik Daur Ulang

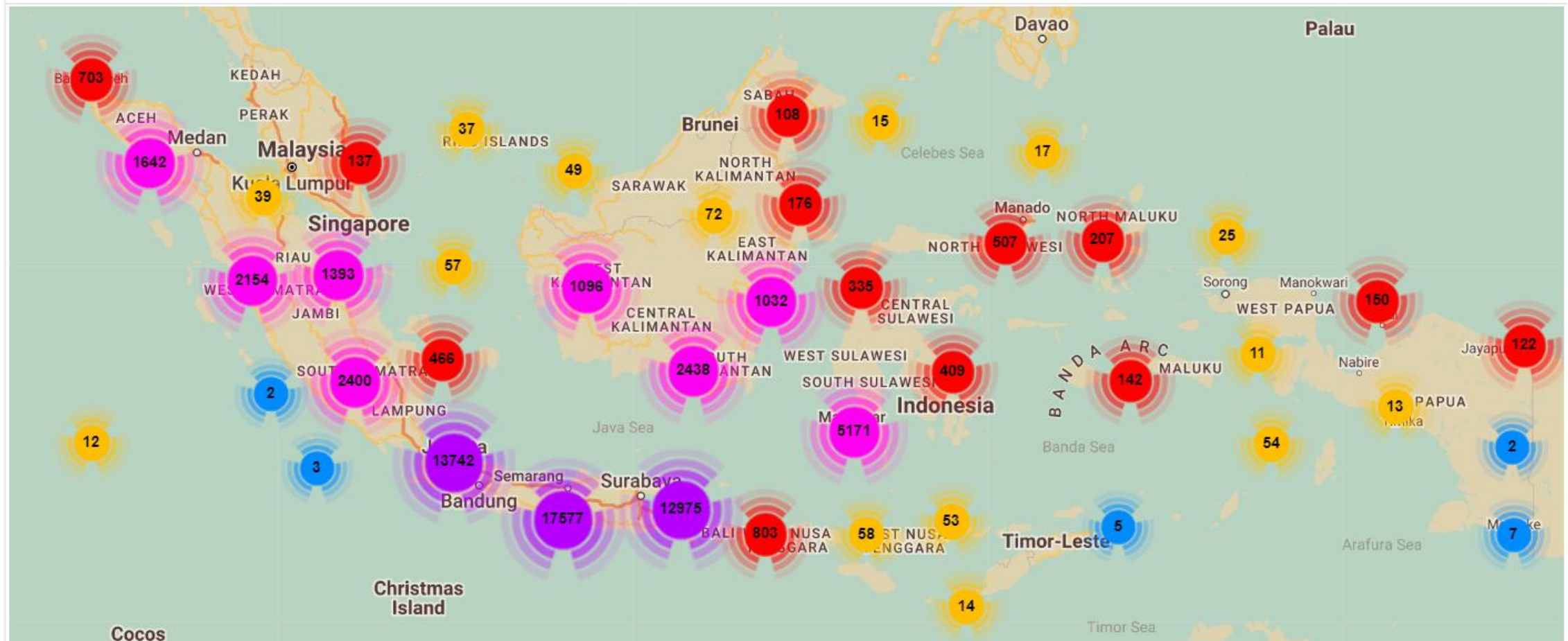
- 2.300.000 Ton

Total Pasokan

- Lokal :1.579.081 Ton
- Impor : 767.109 Ton

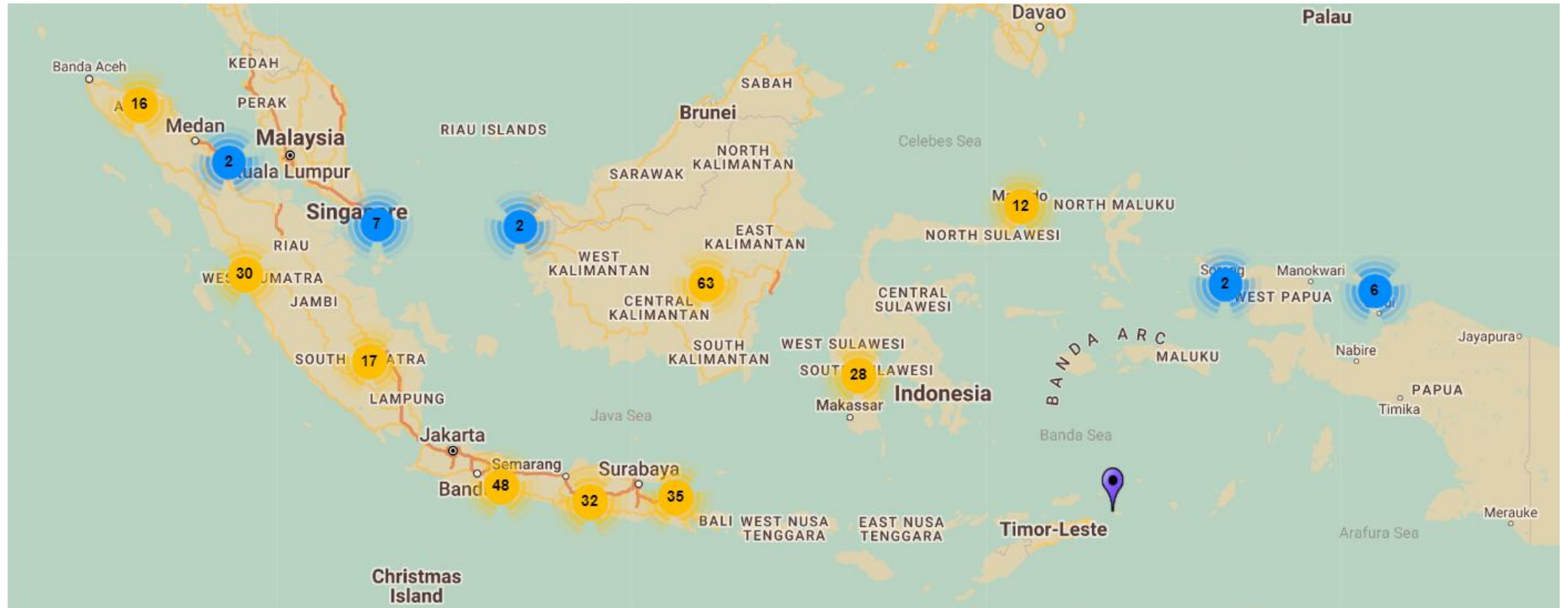


Fasilitas TPA tahun 2022



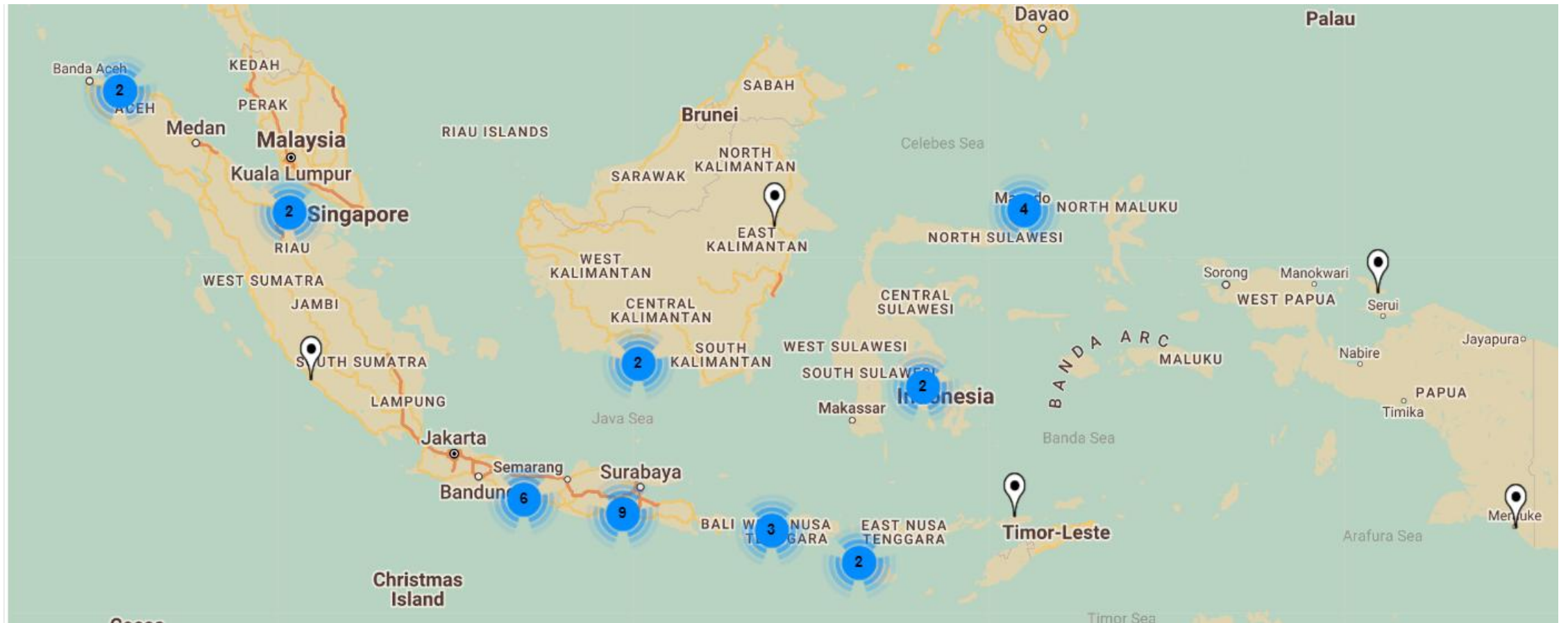


Fasilitas Industri Kreatif tahun 2022

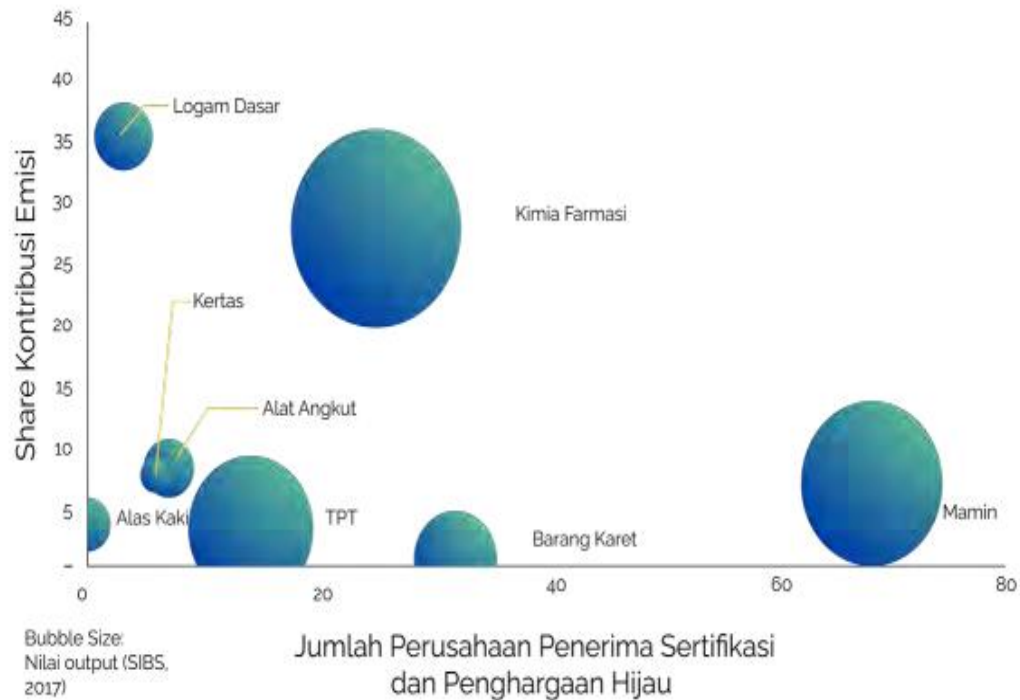




Fasilitas sumber energi tahun 2022



Upaya Efisiensi



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CIRCULAR ECONOMY

- “Circular Economy should broaden its scope from closed-loop recycling and short-term economic gains, towards a transformed economy that organizes access to resources to maintain or enhance social wellbeing and environmental quality” *Velenturf and Purnell (2021)*
- Three principles of CE:
 - resources efficiency
 - security of supply
 - international competitiveness

Sumber: Bank Indonesia, 2023

From Fossil Based Plastic to renewable plastic

- ✓ Combining high recycling rates with renewable feedstocks improves the absolute sustainability of plastics.
- ✓ If recycling rate with advanced recycling technologies reach out 75% in 2030 (current RR 23%)
- ✓ the development of recycled plastic markets promoted by push-and-pull strategies.
 - ✓ the 36–51% higher capital expenditures provide an implementation barrier for circular technologies, although total annualized costs are similar to fossil-based production

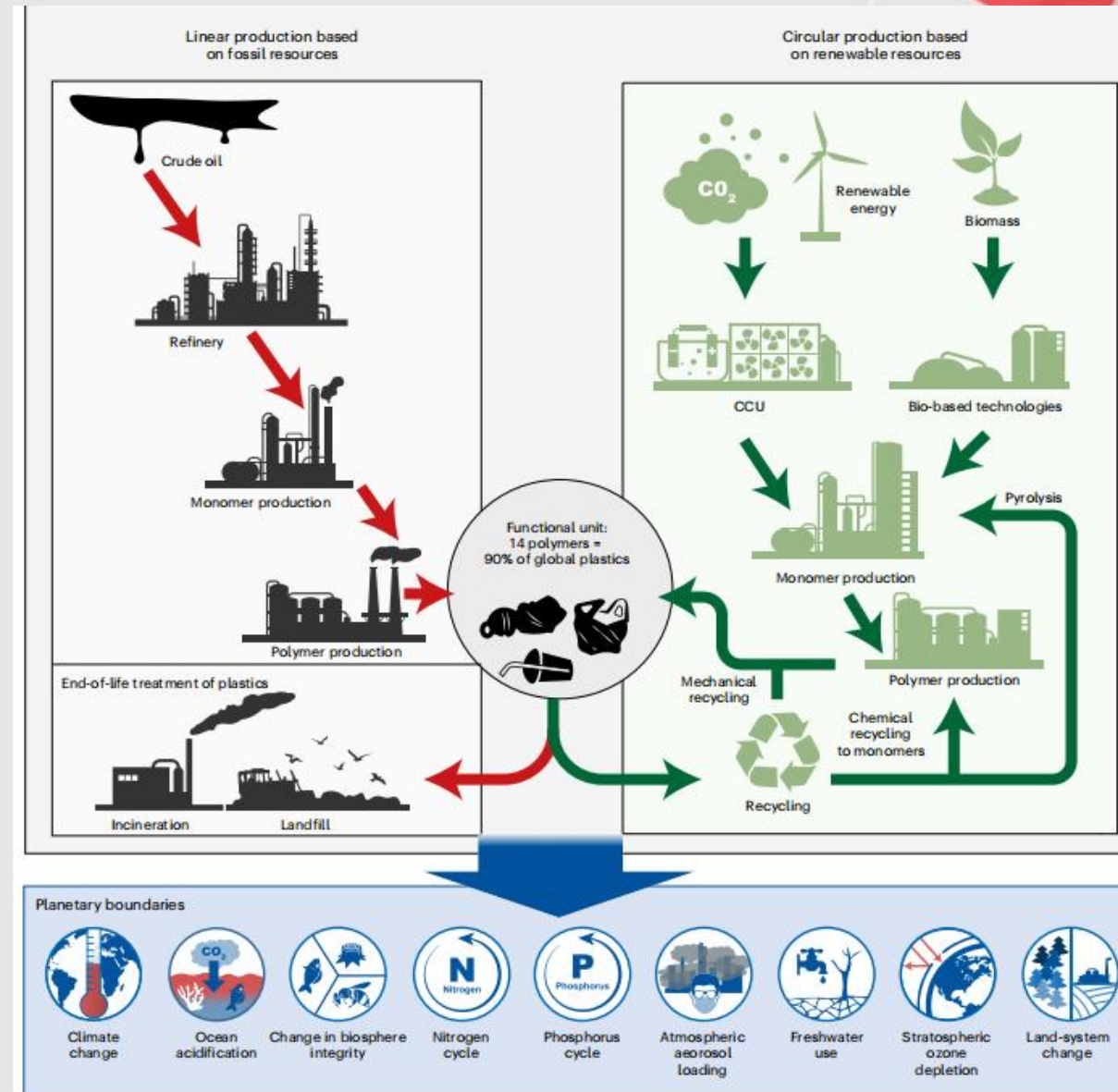


Fig. 1| Conceptual framework. Replacement of current fossil-based plastics (left) with renewable plastics (right) based on biomass, CO₂ via CCU, and recycling, and assessment of their planetary footprints (bottom).



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THE FUTURE OF CIRCULAR

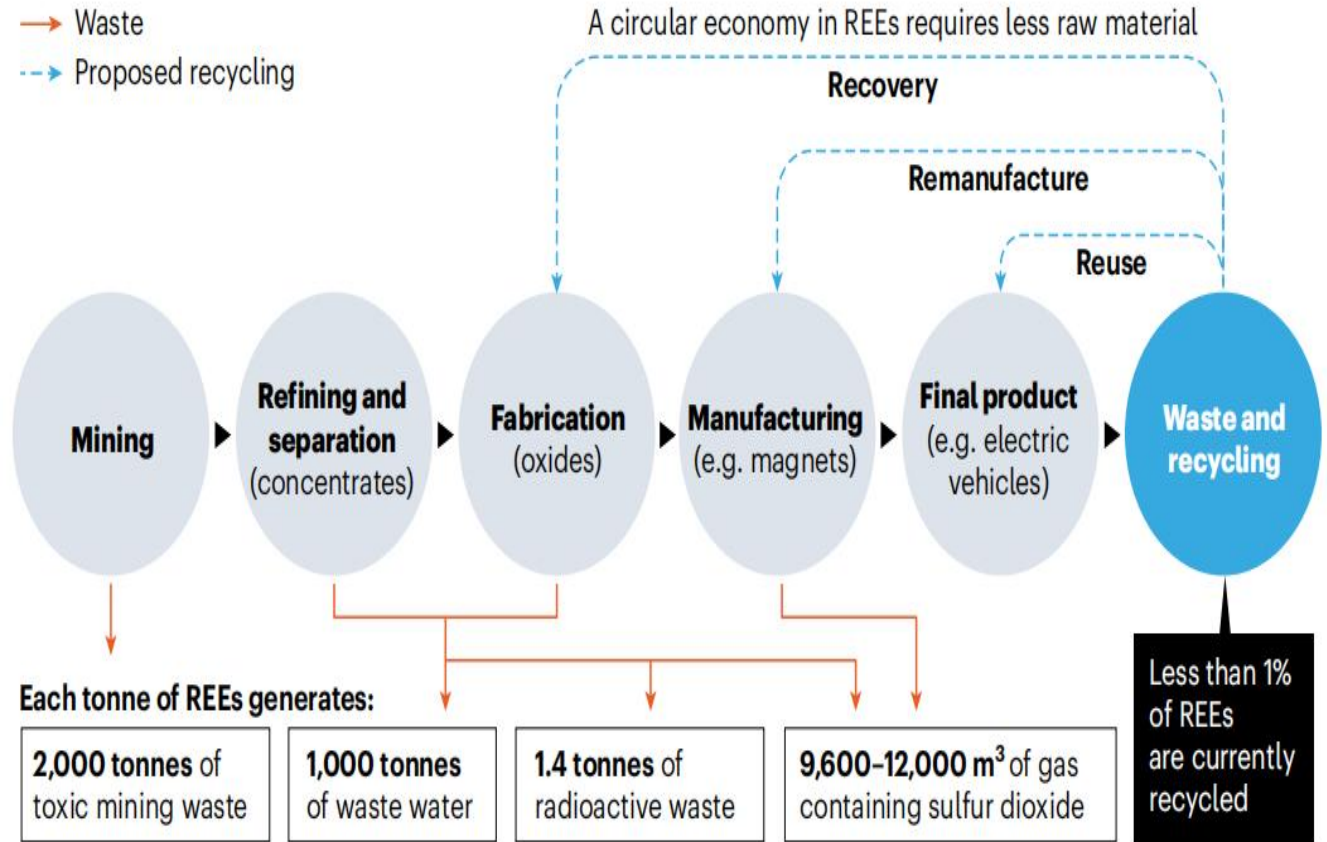
- ❑ Stocks of precious metals and rare earths will increase faster than most base materials, but only about 1% of REEs are currently recycled (Geng et al., 2023)
- ❑ REE-recycling technologies are also immature and economically unfeasible
- ❑ No policies or programmes for recycling REEs from products anywhere in the world.

Further direction to be studied:

- ❑ The policies and practices of organizations throughout future supply chains will need research and adjustment.
- ❑ Global partnership in energy transition and new international trade agreements.

A CIRCULAR ECONOMY IN RARE EARTHS

If products containing rare-earth elements (REEs) were recycled, secondary markets could supply half of industry's needs. This would also reduce the environmental impacts of mining and refining.





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TERIMA KASIH

