



Telkom Group Climate Transition Plan 2025-2060



Telkom Indonesia
Updated 2026



Lembar Pengesahan Dokumen

Telkom Group Climate Transition Plan Towards Net Zero 2060

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Decarbonization Strategy Development

Decarbonization Strategy Development

Future Enhancements



Establish & Maintain Emissions Baseline

- Telkom established its 2023 baseline emissions for Scope 1 and 2, totaling **2,109,132.9 tCO₂e**.
- This baseline will serve as the **foundation** for tracking progress and guiding decarbonization efforts.



Set decarbonization Goal

- Telkom has set clear and achievable decarbonization goals, aiming to **reduce emissions by 20% by 2030** and to **reach net zero emissions by 2060**.



Evaluate Decarbonization Initiatives & Develop Roadmap

- Telkom is developing strategies to decarbonize its emissions by **identifying, evaluating, and prioritizing key abatement initiatives**.
- Through scenario planning, the strategy will support informed decisions, while a clear roadmap will outline initiatives, assign responsibilities, and establish policies to ensure timely achievement of targets.



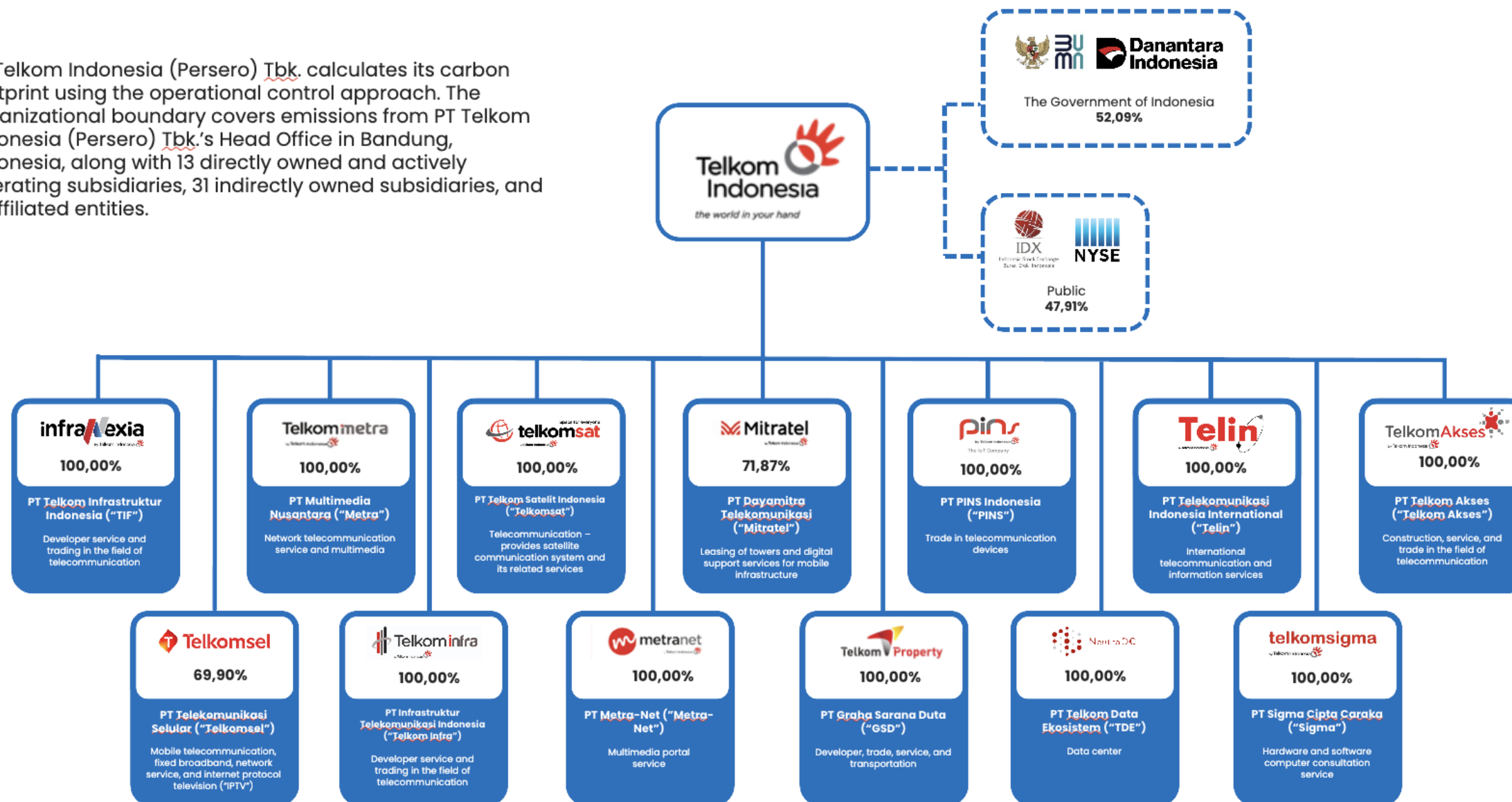
Implement Decarbonization Journey

- Telkom needs to finance, pilot, and scale decarbonization initiatives across its value chain (e.g., physical assets, IT systems, data aggregation, financing structures, implementation partners, etc.).

Telkom Group has defined the decarbonization goal and currently Telkom Group is taking proactive steps to evaluate the decarbonization initiatives, developing roadmap, to implement decarbonization journey.

Telkom Group's GHG Emission Organizational Boundaries

PT Telkom Indonesia (Persero) Tbk. calculates its carbon footprint using the operational control approach. The organizational boundary covers emissions from PT Telkom Indonesia (Persero) Tbk.'s Head Office in Bandung, Indonesia, along with 13 directly owned and actively operating subsidiaries, 31 indirectly owned subsidiaries, and 8 affiliated entities.



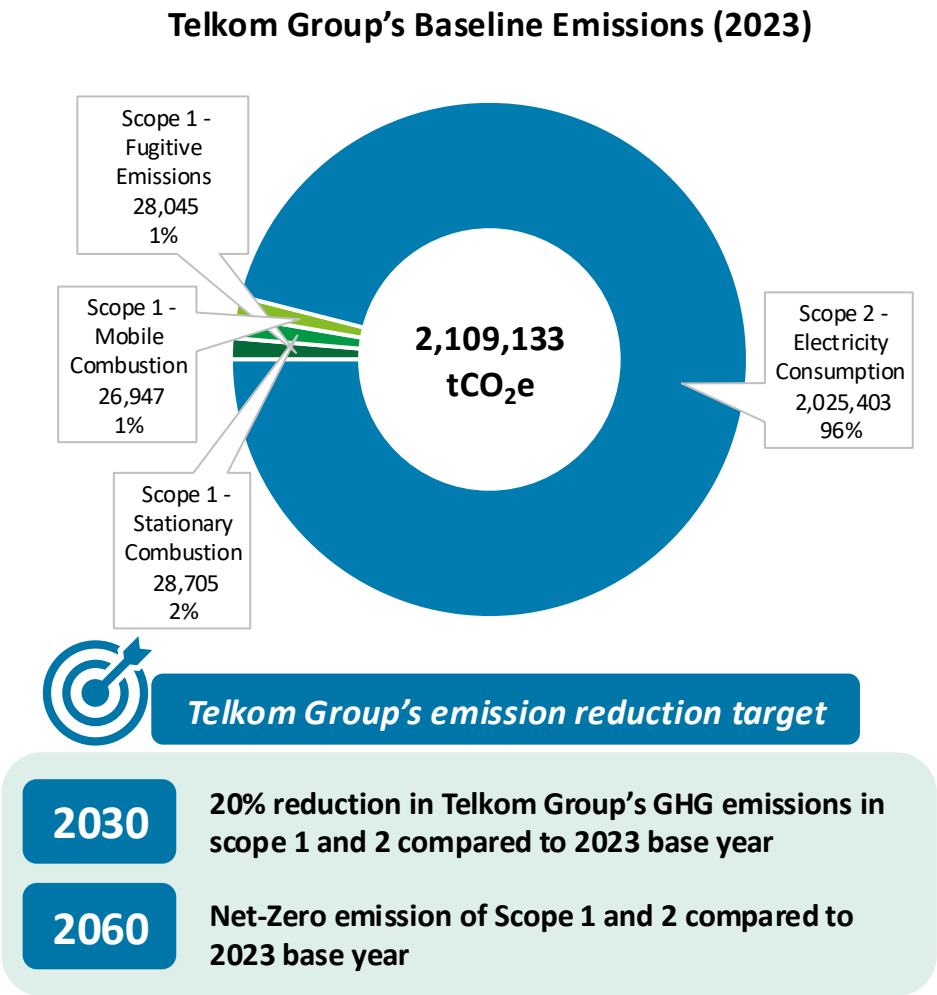
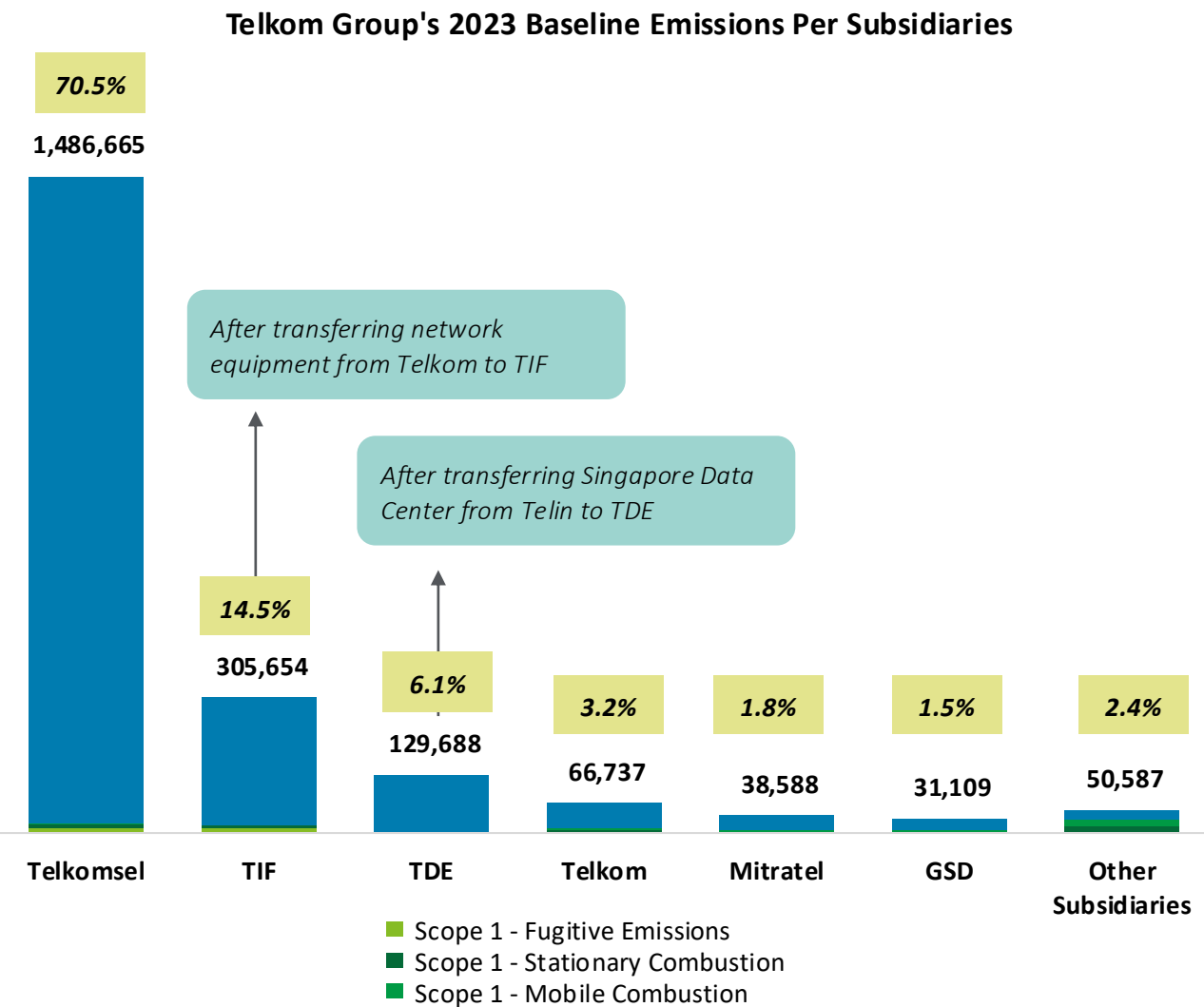
*As per end of year 2025

Telkom Group Emission Profile

SUMMARY	Telkom Group					
	2020	2021	2022	2023	2024	2025
Scope 1	77.426,	85.151,	93.726,	83.730,	82.085,	46.068,
Stationary Combustion	29.838,	30.089,	28.628,	28.045,	27.381,	12.288,
Mobile Combustion	28.232,	31.305,	39.057,	28.705,	27.182,	21.874,
Fugitive Emissions	19.331,	23.728,	26.017,	26.947,	27.491,	11.906,
Effluent Treatment	25,	29,	24,	33,	31,	–
Scope 2 (Purchased Electricity) – Location Based	1.788.611,	1.781.368,	1.919.580,	2.025.402,	2.078.121,	2.182.493,
Scope 3	153.682,	225.364,	284.024,	333.977,1	307.016,3	1.967.526,
Category 1: Purchased Goods and Services	57.838,	91.966,	84.823,	72.727,	87.218,	64.796,
Category 2: Capital Goods	50.932,	90.183,	49.300,	102.673,	70.677,	239.682,
Category 3: Fuel and Energy Related Activities	8,	7,	3,	0,1	0,3	211.750,
Category 4: Upstream Transportation and Distribution	–	–	–	–	–	51,
Category 5: Waste Generated in Operations	1,	70,	71,	81,	1,	271,
Category 6: Business Travel	20.157,	20.966,	36.346,	30.240,	32.119,	3.575,
Category 7: Employee Commuting	–	–	–	–	–	390,
Category 8: Upstream Leased Asset	5.698,	5.803,	6.379,	7.750,	7.986,	77.941,
Category 9: Downstream Transportation and Distribution	–	–	–	–	–	173,
Category 11: Use of Sold Products	–	–	86.473,	99.421,	99.559,	1.367.737,
Category 12: End-of-Life Treatment of Sold Products	–	–	–	–	–	59,
Category 13: Downstream Leased Assets	19,	1,	32,	107,	148,	833,
Category 15: Investments	19.029,	16.368,	20.597,	20.978,	9.308,	268,
TOTAL	2.019.719,	2.091.883,	2.297.330,	2.443.109,1	2.467.22373	4.196.087,
Growth						
Gr YoY Scope 1+2		0,03%	7,86%	2,15%	2,62%	5,60%
Gr YoY All Scope		3,57%	9,82%	4,06%	1,12%	73,57%

Telkom Group Emission Profile

From Telkom Group’s total emissions, Telkom previously accounted for 17.7%. However, after the asset transfer to TIF, **14.5% of Telkom’s emissions were reallocated to TIF, leaving Telkom with 3.2% emission**. In addition, after transferring the data center’s electricity (2023) from Telin SG to TDE, **TDE’s share of emissions rose from 3.7% to 6.1%, while Telin’s share dropped from 3.7% to 0.3%**. Consequently, Telin is now categorized under “other subsidiaries.”

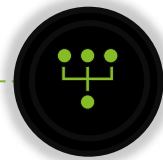


Evaluate Decarbonization Initiative & Roadmap Development Approach



Step 1. Identification of emission reduction initiatives

We identified a comprehensive list of emission reduction initiatives relevant to Telkom Group's business operations through desktop research, peer benchmarking, and focus group discussions with all subsidiaries



Step 2. Prioritisation of emission reduction initiatives

Through a prioritization workshop with Telkom Group's internal stakeholder, we prioritize emission reduction initiatives which will be subject for deeper assessment.



Step 3. Assess key emission reduction initiatives

We quantified potential abatement and investment cost of prioritized emission reduction initiatives and further assessment

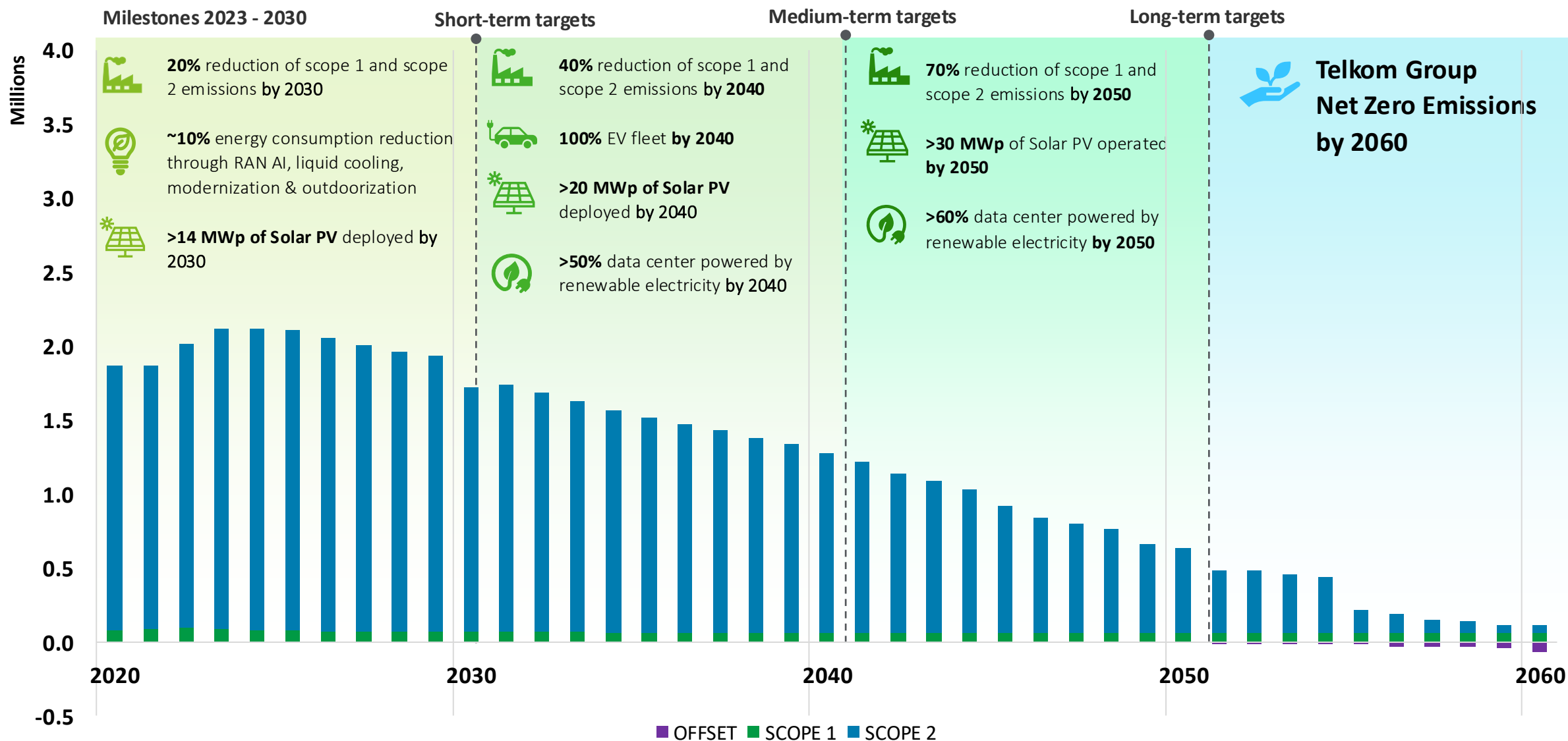
We have deployed the following approach to select and assess key emission reduction initiatives and carbon offset tailored to Telkom Group's objective and business operation.

Decarbonization Levers

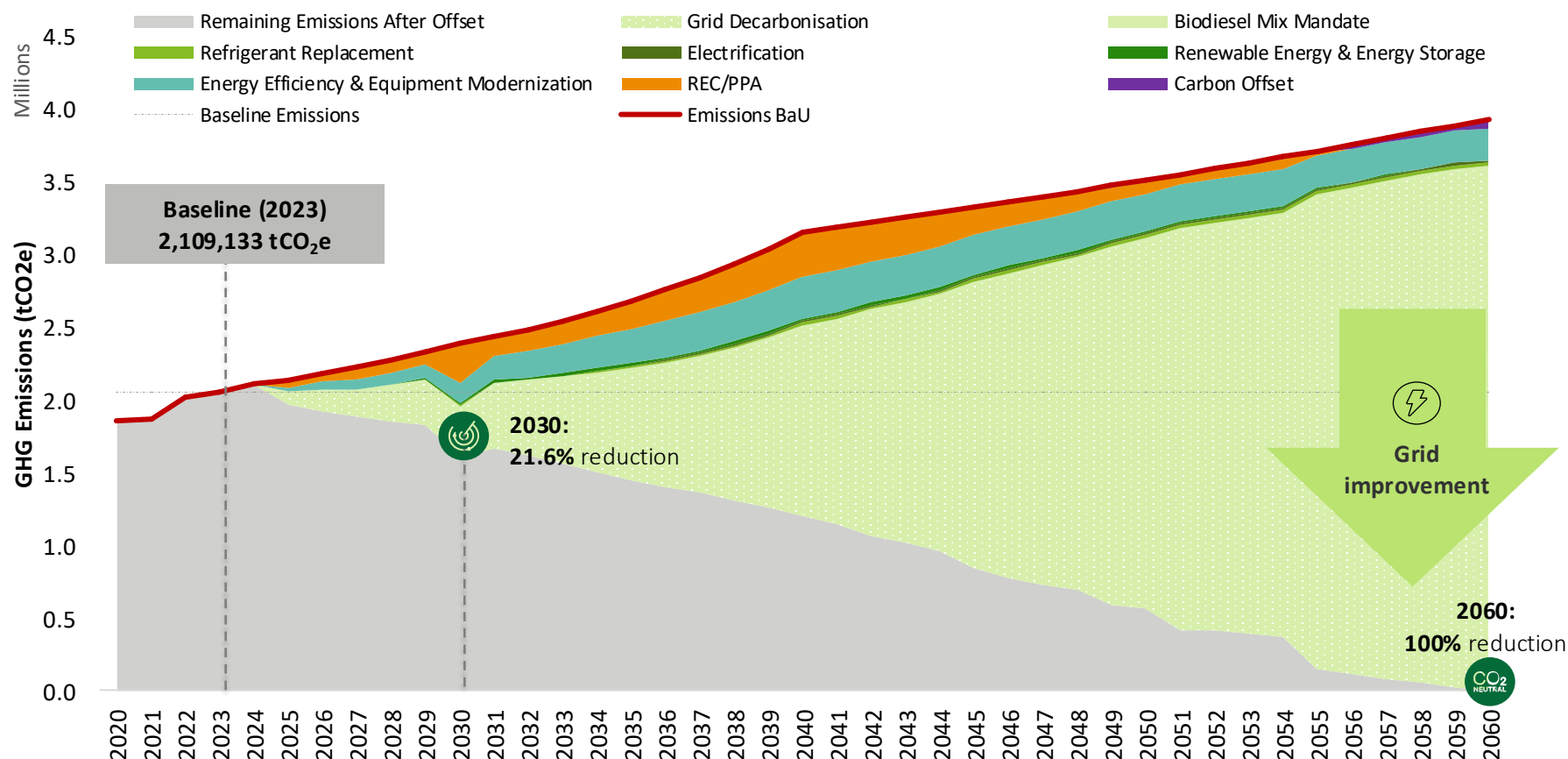
 Energy savings & equipment modernization	 Electrification	 Renewable energy and energy storage	 REC/PPA	 Carbon offsets	 Government efforts
Adopting energy efficiency technologies - Improving energy efficiency - Lighting efficiency - Cooling management system - Technology & equipment modernization	Switching from fossil fuels to electricity - Electrification - Replacement of diesel genset to PLN - Electric Vehicle (EV) transition - Replacement of internal combustion engine (ICE) vehicle to electric vehicle	Expanding renewable energy use - Renewable energy adoption - Solar PV installation - Hydrogen fuel cell genset - Energy storage - Power back up using Lithium Battery	Utilize market-based instruments to reduce electricity-related (Scope 2) emissions Renewable Energy Certificate (REC): Claim use of RE from power grid	Utilize market-based instrument to abate the remaining GHG emission - Carbon credit: Represent the right to emit a specific amount of CO₂e or GHG emission. Ways to obtain include: - Purchase carbon credit from carbon exchange organizer - Partnership to conduct NBS initiative	Reduced emission from electricity grid due to PLN's renewable energy transition Grid emission is expected to improve as PLN increases the use of solar PV, wind, and hydropower in line with PLN's Electricity Supply Business Plan (RUPTL) and National Electricity General Plan (RUKN) Reduced emission from biodiesel mix Ministry of Energy and Mineral Resources (MEMR) plan to mandate a biodiesel mix of 40% by 2025, 50% by 2026, and 60% by 2027. Refrigerant Replacement MEMR developed I-NCAP as a roadmap for sustainable cooling, aiming to reduce energy use and emissions by transitioning to low-GWP refrigerants in building and mobile cooling by 2028.

We categorized the decarbonization levers into 6 main categories, e.g. energy efficiency & equipment modernization, electrification, renewable energy & energy storage, REC/PPA, carbon offset, and government efforts (PLN & MEMR).

Telkom Group's Transition Pathway for Scope 1 & 2 Emissions



Telkom Group's Emission Pathway to Net Zero



Governments effort to decarbonize energy sector

- **PLN's shift** to renewable energy will be the **primary driver** of Telkom's decarbonization^[1].
- The **planned increase mix of biodiesel** will support Telkom's Scope 1 emission reductions.
- MEMR's plan to **phase out high-GWP refrigerants** will reduce fugitive emissions^[2].

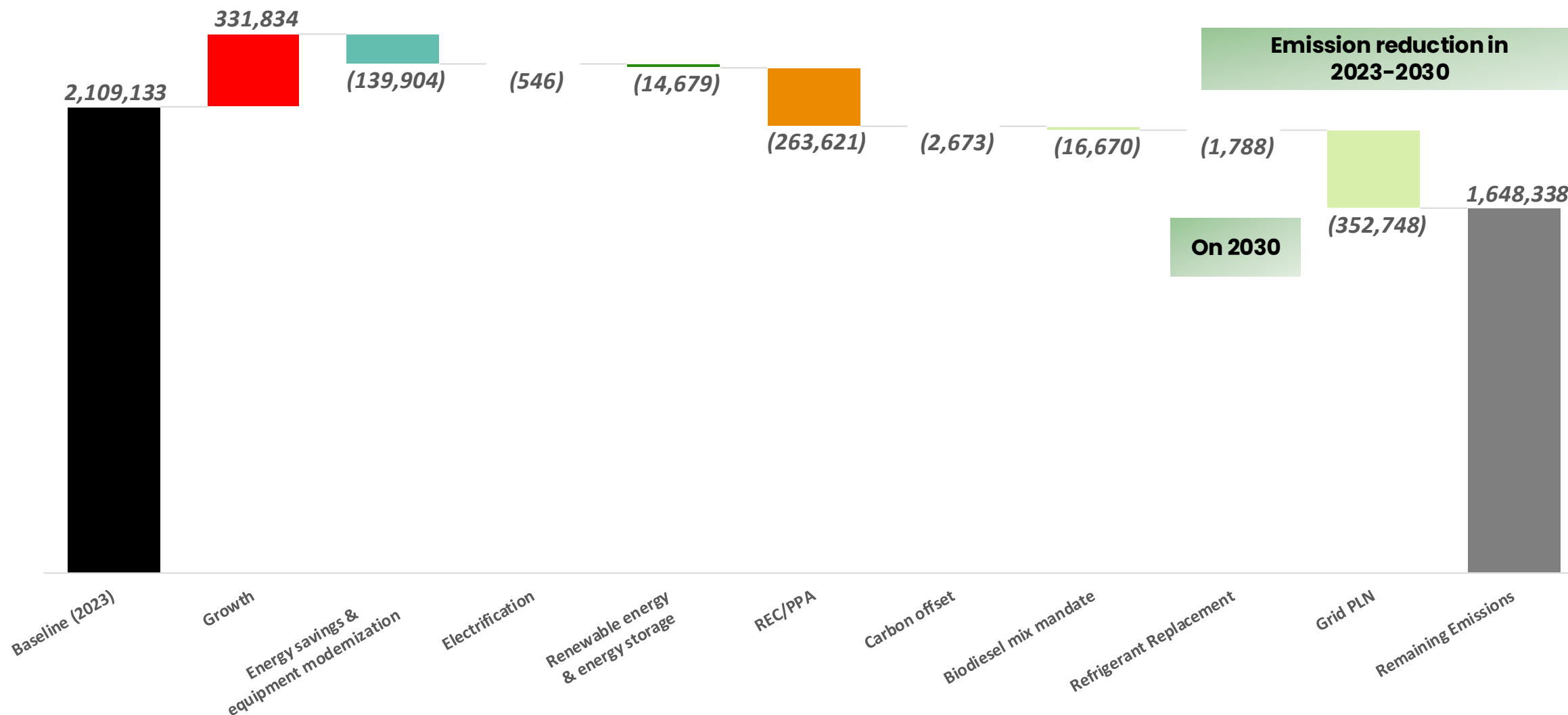


Remaining emissions

- The carbon credit purchases will be continuously implemented **beyond 2060** to maintain net-zero emission.
- Telkom Group must **switch to leasing EV** for its operational fleet **by 2040**.
- This calculation **does not currently reflect reductions** in employee numbers or office closures due to **organizational restructuring**;
- The figures are subject to change based on the extent of workforce & facility reductions.
- In office buildings, the average annual electricity consumption **7.5 MWh/worker**. Using Java's grid emission factor of 0.87 tCO₂e/MWh, results in approximately **6.5 tCO₂e/worker** per year^[3].

Telkom Group's Emission Pathway to Net Zero

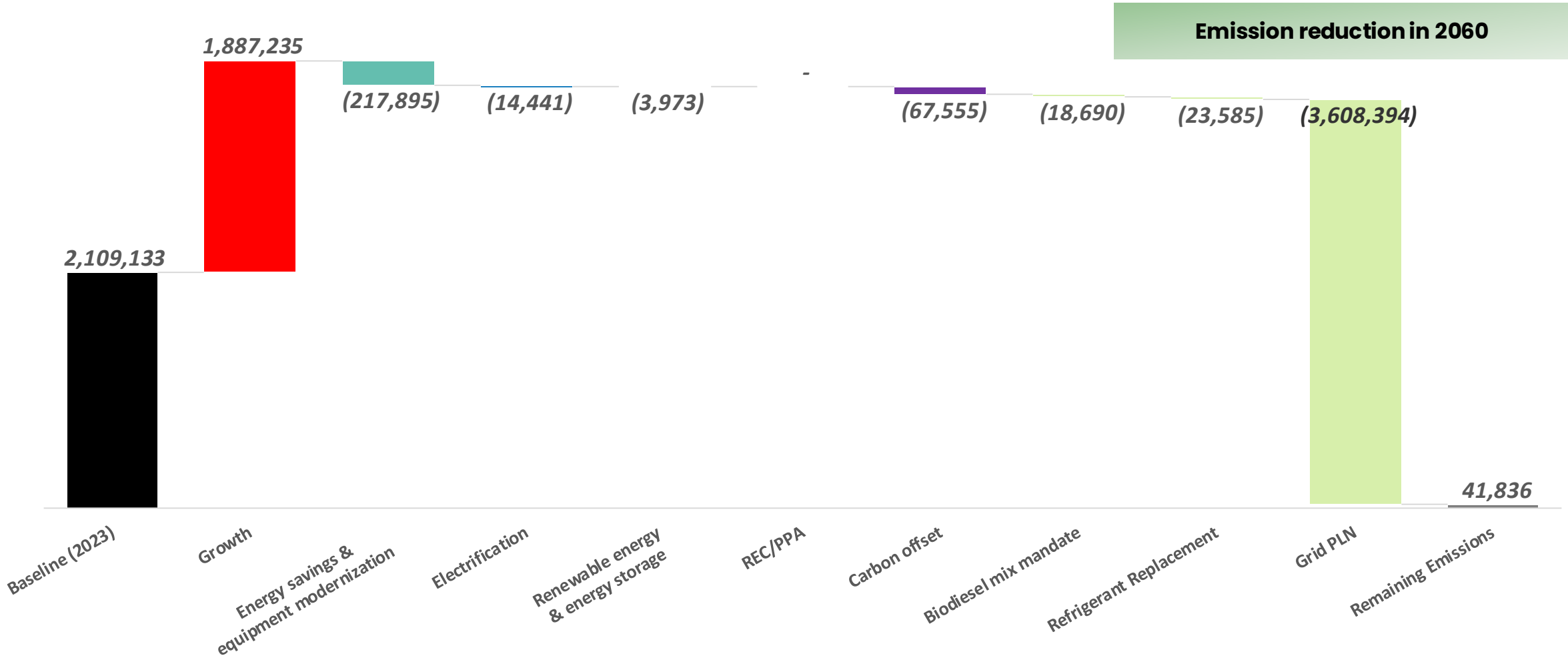
Key decarbonization levers to achieve 2030 emission reduction target



By 2030, Telkom Group's decarbonization levers are projected to reduce baseline emissions by 21.6%—driven primarily by grid decarbonization PLN, complemented by REC purchases in 2030 and energy efficiency & equipment modernization.

Telkom Group’s Emission Pathway to Net Zero

Key decarbonization levers to achieve 2060 emission reduction target



By 2060, Telkom Group is projected to reach net-zero emissions through PLN grid decarbonization, energy efficiency, and equipment modernization. Figures are cumulative, except for one-time REC and carbon credit purchases; REC purchases end before 2060, while carbon credits may continue afterward.

Summary Telkom Group from 2023-2030

The levers represent the cumulative unit amount over the period 2023 to 2030.

LEVERS	UNIT	2023	2024	2025	2026	2027	2028	2029	2030	Keterangan
REC/PPA	MWH	-	-	55,799	57,032	100,371	109,425	112,008	431,201	• 208,472 MWH (TDE) • 172,984 MWH (TELKOMSEL) • 45,394 MWH (TIF) • 4,351 MWH (Others)
OFFSET	tCO ₂ e	-	1,005	1,005	1,005	1,005	1,005	1,005	3,936	• 1,090 TCO2E (TELIN) • 2,846 TCO2E (Others)
EV TOTAL	UNIT	-	-	-	70	129	275	2,131	2,145	• 149 Unit (TELKOM) • 240 Unit (GSD) • 83 Unit (MITRATTEL) • 1,673 Unit (TELKOM AKSES)
SOLAR PV	KWP	407	440	780	1,155	1,455	1,745	2,035	14,347	• 1,752 KWP (TSEL) • 11 KWP (MITRATTEL) • 178 KWP (TELIN) • 12,105 KWP (TDE) • 302 KWP (TIF)
HYDROGEN FUEL CELL	UNIT	-	-	-	-	-	-	-	-	-
LITHIUM BATTERY	UNIT	-	1,623	1,623	1,634	1,645	1,656	1,667	1,678	• 1,678 Unit (MITRATTEL)

Note: REC tahun 2025-2045; PPA Singapore tahun 2025-2060

Summary Telkom Group from 2031-2040

The levers represent the cumulative unit amount over the period 2031 to 2040.

LEVERS	UNIT	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	Keterangan
REC/PPA	MWH	275,746	314,556	359,184	399,454	459,819	529,118	607,309	695,779	797,544	1,066,268	• 1,020,514 MWH (TDE) • 41,351 MWH (TIF) • 4,403 MWH (Others)
OFFSET	tCO ₂ e	4,742	5,128	4,306	3,276	4,022	4,799	5,296	5,020	5,520	6,496	• 6,023 TCO₂E (TELIN) • 473 TCO₂E (Others)
EV TOTAL	UNIT	3,463	8,189	8,279	8,553	8,578	9,343	11,238	11,238	11,293	11,293	• 2,098 Unit (TELKOM) • 439 Unit (GSD) • 292 Unit (MITRATTEL) • 8,459 Unit (TELKOM AKSES) • 5 Unit (TELKOM METRA)
SOLAR PV	KWP	15,406	16,030	16,880	18,084	18,737	19,798	20,533	21,411	22,491	23,390	• 3,144 KWP (TSEL) • 123 KWP (MITRATTEL) • 178 KWP (TELIN) • 12,105 KWP (TDE) • 7,840 KWP (TIF)
HYDROGEN FUEL CELL	UNIT	-	-	-	-	-	-	-	-	-	-	-
LITHIUM BATTERY	UNIT	1,688	1,698	1,708	1,718	1,728	1,738	1,748	1,758	1,768	1,778	• 1,778 Unit (MITRATTEL)

Note: REC tahun 2025-2045; PPA Singapore tahun 2025-2060

Summary Telkom Group from 2041-2050

The levers represent the cumulative unit amount over the period 2041 to 2050.

LEVERS	UNIT	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	Keterangan
REC/PPA	MWH	1,085,514	1,094,108	1,116,355	1,135,654	1,124,375	1,142,608	1,163,579	1,186,544	1,194,920	1,498,366	• 1,498,182 MWH (TDE) • 184 MWH (Others)
OFFSET	tCO ₂ e	6,901	7,262	7,683	8,093	8,393	8,907	9,406	9,993	10,229	11,768	• 6,201 (TELIN) • 5,567 (Others)
EV TOTAL	UNIT	11,293	11,293	11,293	11,293	11,293	11,293	11,293	11,293	11,293	11,293	• 2,098 Unit (TELKOM) • 439 Unit (GSD) • 292 Unit (MITRATEL) • 8,459 Unit (TELKOM AKSES) • 5 Unit (TELKOM METRA)
SOLAR PV	KWP	24,850	26,713	27,796	29,051	29,156	29,261	29,377	29,493	29,610	29,727	• 4,118 KWP (TSEL) • 242 KWP (MITRATEL) • 178 KWP (TELIN) • 12,105 KWP (TDE) • 13,084 KWP (TIF)
HYDROGEN FUEL CELL	UNIT	81	366	644	725	868	1,025	1,064	1,064	1,064	1,064	• 19 Unit (MITRATEL) • 1,045 Unit (TIF)
LITHIUM BATTERY	UNIT	1,883	1,894	1,905	1,916	1,927	1,938	1,949	1,960	1,971	1,982	• 1,982 Unit (MITRATEL)

Note: REC tahun 2025-2045; PPA Singapore tahun 2025-2060

Summary Telkom Group from 2051-2060

The levers represent the cumulative unit amount over the period 2031 to 2040.

LEVERS	UNIT	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	Keterangan
REC/PPA	MWH	1,507,869	1,573,155	1,628,267	1,692,890	1,671,043	1,344,524	1,372,648	1,401,388	1,430,759	1,460,773	• 1,460,773 MWH (TDE)
OFFSET	tCO ₂ e	12,237	13,183	14,019	19,344	15,180	32,866	30,190	33,556	39,133	67,555	• 14,444 TCO₂E (TSEL) • 15,641 TCO₂E (TDE) • 2,251 TCO₂E (TELKOM) • 14,491 TCO₂E (TIF) • 6,237 TCO₂E (TELIN) • 14,491 TCO₂E (Others)
EV TOTAL	UNIT	11,293	11,293	11,293	11,293	11,293	11,293	11,293	11,293	11,293	11,293	• 2,098 Unit (TELKOM) • 439 Unit (GSD) • 292 Unit (MITRATEL) • 8,459 Unit (TELKOM AKSES) • 5 Unit (TELKOM METRA)
SOLAR PV	KWP	29,843	29,960	30,076	30,193	30,310	30,426	30,543	30,659	30,776	30,893	• 5,162 KWP (TSEL) • 364 KWP (MITRATEL) • 178 KWP (TELIN) • 12,105 KWP (TDE) • 13,084 KWP (TIF)
HYDROGEN FUEL CELL	UNIT	1,064	1,064	1,064	1,064	1,064	1,064	1,064	1,064	1,064	1,064	• 19 Unit (MITRATEL) • 1,045 (TIF)
LITHIUM BATTERY	UNIT	1,993	2,004	2,015	2,027	2,039	2,051	2,063	2,075	2,087	2,099	• 2,099 Unit (MITRATEL)

Note: REC tahun 2025-2045; PPA Singapore tahun 2025-2060

THANK YOU

