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New E-Waste Law May Tighten ESG Compliance

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Telcos contribute to e-waste pollution primarily via: (i) obsolete or redundant network equipment and data center infrastructure from technology refresh cycles, and (ii) disposal of consumer electronic devices bundled with service plans. As most decommissioned network gear contains hazardous components, we believe it qualifies as SW110 scheduled waste under the Environmental Quality Act 1974. Accordingly, telcos generating e-waste from network and IT modernization must comply with strict scheduled waste management and reporting requirements. In contrast, bundled consumer electronics are classified as household e-waste and currently fall outside these obligations. However, in future, the government's planned Extended Producer Responsibility (EPR) framework could hold telcos financially accountable for subscriber device e-waste.

The Global Reporting Initiative (GRI) 306: Waste 2020 standard requires detailed disclosures on waste generation, its impacts, and practices implemented for its management. In Malaysia, it currently applies only to SW110 scheduled e-waste, but the upcoming EPR framework could extend reporting obligations to include bundled devices under telco service plans.

In FY24, mobile players ranked e-waste management higher in their materiality matrices than fixed-line operators. We believe the lower emphasis by fixed line players reflect: (i) lower volumes of SW110 waste due to their focus on fiber networks and data centers (rather than mobile network infrastructure), and (ii) TM's relatively small mobile base, limiting handset bundling.

The impending EPR roll-out is still currently under feedback stage, but could mark a significant regulatory shift. Telcos may need to expand e-waste take-back programs and engage DoE-licensed contractors for nationwide collection, recycling, and disposal. Based on our rough estimates, simplistically assuming collection charges from subscriber premises, CDB could incur up to RM100m–RM140m p.a. (3%–4% of FY25F COGS) in potential collection costs paid to contractors, while MAXIS could face RM68m–RM95m p.a. (c.2% of FY25F direct costs). While compliance could result in higher opex (e.g. due DoE-licensed contractor fees, audits, and potential penalties), it could also reduce Scope 3 emissions (GHG Protocol), strengthens participation in the circular economy, and mitigate long-term environmental risks.

Our recent ESG-themed site visit to ERTH (E-Waste Recycling Through Heroes) drew strong attendance. ERTH is recognized as one of the top e-waste licensed collectors by The Department of Environment (DoE), and the official e-waste recycling partner for MAXIS. It also manages the recycling programs for other Malaysian multinationals such as Panasonic, DHL, Hong Leong, and etc. to enhance ESG reporting and compliance.

1. How do Telcos contribute to e-waste pollution?

i. Obsolete or redundant network gear

Ongoing technology cycles (e.g. 3G shutdowns, 5G roll-outs, data centers infrastructure upgrades) entail the decommissioning and disposal of data center and mobile network hardware, generating significant volumes of e-waste. Major equipment categories include: (i) Radio access: Cell site radios, transceivers, transmitters, receivers, antennas, and rectifiers, (ii) Core Network Hardware: Routers, switches, servers, multiplexers, and optical transmission equipment, (iii) Power systems**:** Uninterruptible power supply (UPS) units and batteries (lead-acid and lithium-ion), (iv) Cabling infrastructure**:** Copper and fiber optic cables, and (v) Technology packages from vendors (e.g. Huawei, Ericsson, Nokia) containing printed circuit boards (PCBs), semiconductors & chipsets, and embedded batteries. DOE, through its Certified Environmental Professional in Scheduled Waste Management (CePSWAM) training modules, highlights that most used electronic equipment contains hazardous components.

ii. Disposal of consumer electronic devices bundled with service plans

Malaysian telcos offer service plans bundled with subsidised or discounted electronic devices and household appliances such as: (1) Mobile (postpaid) plans: smartphones, tablets, smart watches, wireless speakers/headphones, and (ii) Home fiber and pay-TV packages: routers, set-top boxes, mesh WiFi units, vacuum cleaners, TVs.

Over time, consumers discard these devices once they become obsolete, often without returning them to telcos. This indirectly links telcos to household e-waste pollution, arising from the life-cycle of the devices they introduce into the market. According to DoE, Malaysia is estimated to generate 24.5m units of e-waste in 2025 (2024: 23.8m) where most of the discarded items are mobile phones followed by personal computers. Components in e-waste contain toxic and hazardous material such as mercury, lead, cadmium, arsenic, bromine, and beryllium that will permeate into the earth and subsequently water sources, threatening aquatic and human life. E-waste components also contain precious

metals such as gold, copper, palladium and silver which have high recycling value.

2. What are the regulations on network equipment e-waste?

The Environmental Quality Act 1974 (Act 127), together with the Environmental Quality (Scheduled Wastes) Regulations 2005 (EQSWR 2005), classifies e-waste as *"scheduled waste"* under code SW110: Waste from electronic or electrical assemblies. Equipment falls under SW110 if it contains, among others: (i) lead-acid, lithium-ion, or nickel-cadmium batteries, (ii) PCBs, switches, or circuit parts with heavy metals, (iii) capacitors, and (iv) mercury-switches. As most network equipment incorporates one or more of these components, we believe ***the bulk of decommissioned network gear qualifies as SW110 scheduled waste.***

The environmental regulations outline the responsibilities of waste generators - including ***notification of quantities of generated waste, as well as proper storage, transport, disposal, treatment and recovery of scheduled waste. These processes must be conducted either at approved on-site facilities or via DOE-licensed contractors and recyclers.*** Accordingly, telcos generating e-waste from network upgrades or IT asset modernization are legally obliged to comply with these reporting requirements and scheduled waste management practices. Under Section 34B of EQSWR 2005 (Amendment 2024), penalties for improper handling, storage, transport, or disposal of scheduled waste include a fine of RM100k up to RM10m and imprisonment up to 5 years.

3. What about current regulations on consumer electronics e-waste? What is Extended Producer's Responsibility (EPR)?

According to DoE, e-waste in Malaysia is broadly classified into two categories based on its source: (i) industrial e-waste and (ii) household e-waste. At present, household waste generators (ie. consumers) are responsible for channelling disposed e-waste to the originating retailer, registered collection centers, or DoE-licensed recovery facilities.

The DoE is developing an Electrical and Electronic Waste Management System (EEWMS) that will regulate e-waste from generation to final disposal. In parallel, ***a legal framework is being formulated to implement the concept of Extended Producer Responsibility (EPR), ensuring shared responsibility among all stakeholders — including manufacturers/importers, retailers, consumers, collectors, and recyclers.***

The EPR policy framework, led by the Ministry of Housing and Local Government (KPKT), has obtained in-principle approval from the National Circular Economy Council (NCEC) in May 2025. Implementation will fall under the Circular Economy Blueprint for Solid Waste 2025-2035, which includes key elements such as the EPR operating model, identification of obligated companies, procurement targets, type of materials, implementation phases, and stakeholder responsibilities.

Under EPR, producers must ensure that their products are eventually disposed via environmentally-sound methods and bear full financial responsibility for e-waste management. Producers are required to contribute fees tied to their products, while other responsible parties handle the management of the e-waste. The DoE is currently conducting a public survey to gather feedback on EPR implementation.

As defined by the DoE, household e-waste includes electrical and electronic appliances that are broken, non-functional, or obsolete such as: (i) washing machines, (ii) refrigerators, (iii) televisions, (iv) personal/ desktop computers, (v) air-conditioners, and (vi) mobile phones. The EEWMS currently regulates the control and management of these six e-waste categories. Other smaller e-waste appliances (eg. CD players, hair dryers, microwave ovens, printers) will be included in future as EEWMS advances.

Based on our understanding, EPR frameworks for mobile handsets are well-established in regions such as the European Union, Japan, South Korea, China, and parts of North America. Under these regimes, legal responsibility rests with producers and importers (e.g., Apple, Samsung, Huawei), which finance collection, recycling, and recovery. Meanwhile, telco operators typically play a supporting role, facilitating compliance through voluntary initiatives such as handset trade-ins and retail take-back schemes

4. What are ESG standards on e-waste?

The Global Reporting Initiative (GRI) 306: Waste 2020 standard requires comprehensive disclosures on waste generation and its impacts, as well as practices implemented for waste management. Transparent metrics, ideally benchmarked against baselines or sector peers, enables stakeholders to evaluate risks, opportunities, and progress toward circular economy goals. In a nutshell, key disclosure requirements include:

i. Waste generation analysis: Description of how and where waste is generated across an organization's own operations, upstream supply chain, and downstream product use.

ii. Waste management programs: Policies, procedures, and actions implemented to prevent waste generation and mitigate its environmental impact. This includes oversight mechanisms for third-party waste handlers to ensure compliance.

iii. Quantitative reporting: Total weight, categorized by composition (e.g. hazardous vs. non-hazardous) and treatment location (ie. onsite/off site) of:
   (a) Total waste generated
   (b) Waste diverted from disposal through recovery operations (eg. reuse, recycling, repurposing)
   (c) Waste directed to disposal (eg. landfilling, incineration)

GRI disclosures apply on waste as defined under national legislation at the point of generation. In Malaysia, this currently covers only SW110 scheduled e-waste generated by telcos. However***, with the planned implementation of EPR, the scope may extend to bundled electronic devices under telco subscriber plans, bringing these additional e-waste streams within GRI reporting requirements.***

In FY24, quantitative disclosures on e-waste provided by major telcos include:
(1) CDB: e-waste generated and collected from decommissioned network sites amounted to 387 tonnes, out of which 39 tonnes were recovered, resold and recycled.
(2) MAXIS: (i) 88% recycling rate for network waste, and (ii) 325 remote radio units were replaced using decommissioned equipment.
(3) TM: (i) 20.97 tonnes of e-waste were diverted from landfills since 2021, (ii) 22,437.9 kg CO_2 emissions were prevented since 2021 through responsible disposal, and (iii) extended the lifecycles of 390 end-user computing devices and components
(4) TIMECOM: 315 batteries for data center power backup were responsibly recycled through DoE approved facilities.

5. Key Takeaways from ERTH site visit

According to ERTH, mobile handsets account for an estimated 30% of total e-waste units in Malaysia. For ERTH, collected handsets typically follow one of these three outcomes: (i) resale on ERTH's e-commerce platform (bbtech.shop) after repair and refurbishment, (ii) parts harvesting, with functional components sold to spare parts dealers, or (iii) recycling at licensed DoE recovery facilities. Currently, the mix is balanced between units resold and those directed to recovery facilities or spare parts dealers.

The expected implementation of the EPR framework may require telcos to manage the disposal of discarded bundled subscriber devices through DoE-licensed partners. ERTH projects that a draft of this framework could be ready by 2027. If enacted, this could create opportunities for ERTH to establish or expand partnerships with telcos by offering its white-label collection service. Under this service offering, ERTH manages the entire process of collecting e-waste from a client's customer base by charging a fixed fee per transaction. The fees help to offset logistics costs incurred in retrieving items from installers, end-consumers, or designated warehouse pickup points.

Exhibit 1: ERTH Collection Center Foyer

Source: Kenanga Research

Exhibit 2: ERTH E-Waste Collection Cages

Source: Kenanga Research

Exhibit 3: Recovered Devices (for Refurbishment)

Source: Kenanga Research

Exhibit 4: bbtech.shop Finished Inventory

Source: Kenanga Research

6. ESG Materiality

In FY24, telcos prioritize waste management differently in their materiality matrices:

(1) CDB**:** The importance of *climate change and environmental action* is deemed high in terms of impact and moderate-high in terms of financial materiality.

(2) MAXIS: While waste management is not specifically highlighted, *environmental management* and *climate change* are classified as medium-rated material matters.

(3) TM**:** Amongst other material matters, e*nvironmental quality* ranks at the lower-end in terms of importance to stakeholders significance, sustainability impact and business materiality.

(4) TIMECOM**:** In comparison to other ESG topics, *waste management and recycling* is ranked lowest in terms of importance to enterprise value creation and extent of environmental and social impact.

In our view, the lower emphasis on waste management by fixed-line players TM and TIMECOM reflects: (i) relatively lower generation of SW110-scheduled waste, given their focus on fiber networks and data centers rather than mobile network infrastructure, and (ii) TM's smaller mobile subscriber base, which limits the bundling of consumer handsets.

7. Conclusion

The impending implementation of the EPR framework could represent a major regulatory shift for Malaysia's telco sector. Under this policy, telcos may be held legally and financially accountable for ensuring the environmentally sound management of e-waste generated from discarded electronic devices bundled with their service plans. To comply, telcos may need to introduce or expand e-waste take-back programs through their retail networks, and outsource the collection, recycling, or disposal of these devices to DoE-licensed contractors (e.g. ERTH and Metahub Industries). Partnering with such contractors would allow telcos to leverage on their established backend logistics systems, facilitating large-scale e-waste collection and processing across the country.

Based on our rough estimates, CDB could incur up to RM100m-RM140m p.a (3%-4% of FY25F COGS) in potential collection costs paid to contractors (e.g. ERTH) if the EPR framework requires full take-back of bundled subscriber devices. Key underlying assumptions for our estimates include: (i) 50% take-up rate for subsidized or discounted handsets among CDB's current postpaid base of 5.95m subscribers, (ii) average postpaid contract cycle of 18 months, and (iii) using prevailing charges for device collection from subscriber home premises: RM50-RM70 per device (one transaction per discarded device). Applying the same assumptions, MAXIS could face potential annual collection costs of RM68m–RM95m (c.2% of FY25F direct costs) based on its postpaid base of 4.04m subscribers. For simplicity, we have ignored there could be other efficient methods of collection, including inducing device trade-ins, or improved public awareness in recycling.

At this stage, it remains too early to determine when the EPR framework - together with its finer details and identified stakeholders - will be approved by Parliament and subsequently enforced. Although it received in-principle approval from the NCEC in May 2025, several key steps remain. These include the drafting of detailed regulations, stakeholder consultations, and formal presentation to Parliament, all of which could prolong the implementation timeline.

In a downside scenario, if revenue from recycled material recovery is insufficient, telcos' compliance with EPR may increase operational costs. Key cost drivers would include investments in collection infrastructure, fees paid to DoE licensed partners, audit requirements, and potential non-compliance penalties. On the upside, EPR compliance may enable telcos to lower their Scope 3 emissions - specifically Category 12: End-of-Life Treatment of Sold Products (GHG Protocol), while reinforcing their role in the circular economy and mitigating long-term environmental risks.

Peer Comparison

Name	Rating	Last Price (RM)	Target Price (RM)	Upside	Market Cap (RM m)	Shariah Compliant	Current FYE	Core EPS (sen)		Core EPS Growth		PER (x) - Core Earnings		PBV (x)	ROE	Net Div. (sen)	Net Div. Yld.
								1-Yr. Fwd.	2-Yr. Fwd.	1-Yr. Fwd.	2-Yr. Fwd.	1-Yr. Fwd.	2-Yr. Fwd.	1-Yr. Fwd.	1-Yr. Fwd.	1-Yr. Fwd.	1-Yr. Fwd.
Stocks Under Coverage																	
AXIATA GROUP BHD	MP	2.71	2.70	-0.4%	24,892.6	Y	12/2025	5.2	5.5	-44.2%	5.7%	52.4	49.5	1.4	1.2%	11.0	4.1%
CELCOMDIGI BHD	OP	3.79	4.19	10.6%	44,462.4	Y	12/2025	14.4	16.1	-5.8%	11.6%	26.3	23.6	2.7	10.4%	12.0	3.2%
MAXIS BHD	MP	3.68	3.56	-3.3%	28,833.1	Y	12/2025	19.7	19.1	8.8%	-3.0%	18.7	19.2	4.6	25.5%	16.0	4.3%
OCK GROUP BHD	MP	0.415	0.390	-6.0%	436.3	Y	06/2025	2.6	3.0	-9.1%	12.6%	15.7	13.9	0.7	4.6%	1.0	2.4%
TELEKOM MALAYSIA BHD	OP	7.08	8.15	15.1%	27,171.2	Y	12/2025	47.3	47.4	-12.0%	0.3%	15.0	14.9	2.5	16.9%	32.5	4.6%
TIME DOTCOM BHD	OP	5.15	5.91	14.8%	9,521.4	Y	12/2025	26.1	28.7	10.6%	9.9%	19.7	17.9	2.5	12.2%	30.5	5.9%
SECTOR AGGREGATE					**135,317.0**					**-8.5%**	**3.9%**	**22.5**	**21.7**	**2.4**	**11.8%**		**4.1%**

Source: Bloomberg, Kenanga Research

Stock Ratings are defined as follows:

Stock Recommendations

OUTPERFORM : A particular stock's Expected Total Return is MORE than 10%
MARKET PERFORM : A particular stock's Expected Total Return is WITHIN the range of -5% to 10%
UNDERPERFORM : A particular stock's Expected Total Return is LESS than -5%

Sector Recommendations***

OVERWEIGHT : A particular sector's Expected Total Return is MORE than 10%
NEUTRAL : A particular sector's Expected Total Return is WITHIN the range of -5% to 10%
UNDERWEIGHT : A particular sector's Expected Total Return is LESS than -5%

******Sector recommendations are defined based on market capitalisation weighted average expected total return for stocks under our coverage.***

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