



# CleanTech role in the post- COVID era

**Dulip Tillekeratne**  
**CleanTech, GSMA**





# Before 2020.....

- Increased digital commerce
- Sophisticated online education systems
- More than 50% of employees working from home
- Online telemedicine platforms
- Virtual gatherings/parties

Would've only meant .....



Before 2020.....





# However today.....



- Increased digital commerce
- Sophisticated online education systems
- More than 50% of employees working from home
- Online telemedicine platforms
- Virtual gatherings/parties

All what we call new normal!



# THE GSMA



Has represented the interests of mobile operators worldwide for more than

**30 YEARS**

Unites more than  
**750**  
mobile operators



with almost  
**400**

companies in the broader mobile ecosystem



Convenes more than **200,000** people annually from across the globe to **industry-leading** events



Focuses on activities where collective action can deliver significant benefits



Led the mobile industry to formally commit to the Sustainable Development Goals



# Mobile for Development



74.2 million lives impacted to date



We drive innovation in digital technology to reduce inequalities in our world



SUSTAINABLE  
DEVELOPMENT  
GOALS



# CleanTech

Leveraging digital technology as an enabler for low- and middle-income countries' transition towards a low-carbon, climate-resilient economy



## Natural resource management (NRM)

- Digital solutions can support environmental management, pollution monitoring and protection of natural resources.
- MNO IoT networks can support data collection and monitoring of species, people and assets, often in real time or near-real time.
- Read our landscaping research: [Digital Dividends in Natural Resource Management.](#)

## Circular economy within the digital supply chain

- Industry supply chain and mobile technology can support circular economy, reduce pollution and reduce resource pressure on the environment.
- Plastic waste management via a web application, mobile and SMS ([Coliba Ghana](#)).
- [Read our blogs on plastics and e-waste to learn about MNO best practice and current initiatives.](#)

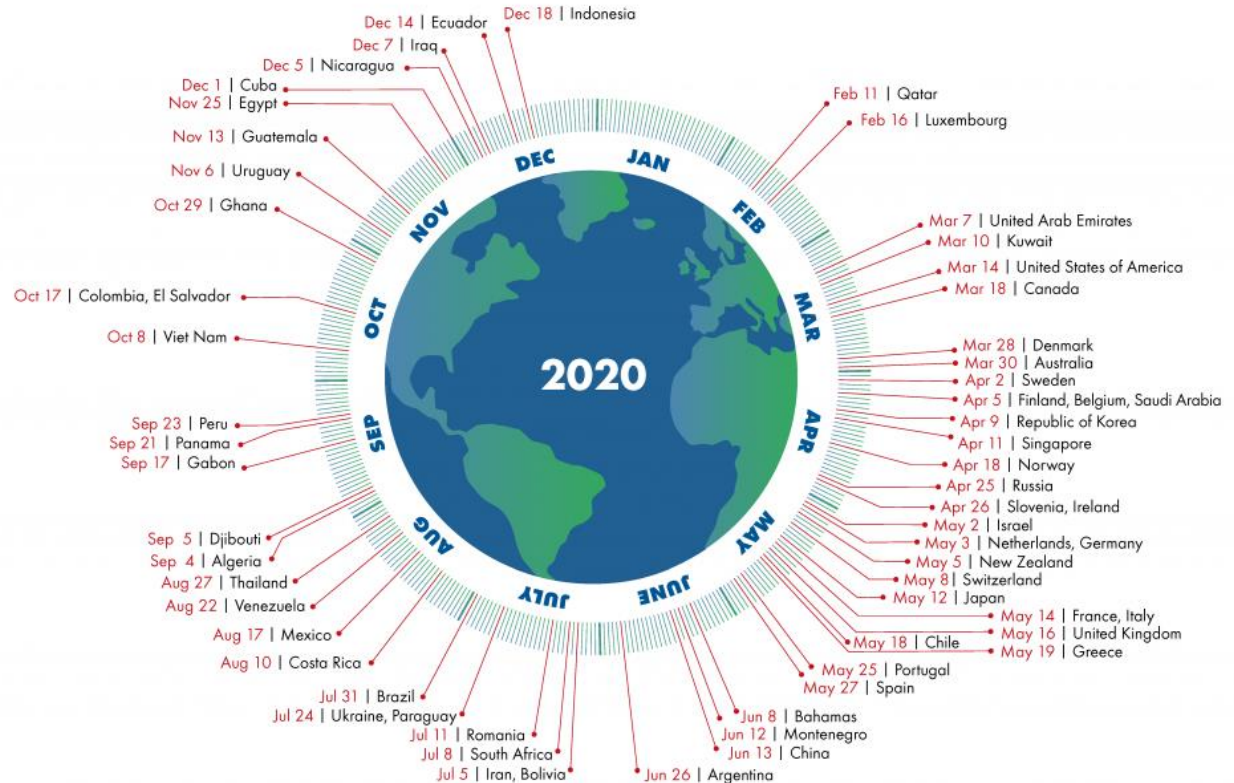
## Green energy

- Opportunity for MNOs and ecosystem partners to switch to renewable sources, especially in off-grid and bad-grid environments.
- Upcoming research on industry best practice and opportunities (July 2020).

# Country Overshoot Days 2020

When would Earth Overshoot Day land if the world's population lived like...

We need **1.76 Earths** to sustain our world today



Source: Global Footprint Network National Footprint and Biocapacity Accounts 2019





# Technology is used in 3 distinct ways in NRM

While there is great diversity in the scale, content and stakeholders involved in the digital NRM projects, there are common patterns in the way technology is applied to NRM. From the 131 projects in the study, 3 key use-cases emerged:

## 1. Technologies and connected devices for monitoring and data collection



- Connected devices (IoT) and other technologies are used to support data collection and the monitoring of species, people and assets, often in real-time or near-real-time.
- **Common Technologies Used:** Sensors, Satellite, Drones, Camera Traps and Mobile Devices

## 2. Citizen science led technologies for participatory approaches to NRM



- Technologies and approaches used to influence positive behaviours or to provide communities with the tools needed to participate in NRM projects, to access information or support, or to receive payments for ecosystems services.
- **Common Technologies Used:** Call Centres, Interactive Content, Peer-to-Peer Content, 'Push and Pull' Content, Mobile Payments, Mobile Devices

## 3. Technologies for data analysis and visualisation



- Artificial Intelligence and other data management tools are used to provide real-time analysis, support decision-making, predict trends and drive efficiencies.
- **Common Technologies Used:** Inventory Management Tools, Blockchain, Artificial Intelligence, Data Visualisation Software



Globally, we produce **450 million tonnes** of plastic every year, and over the next two decades this number is expected to double. It's one of the **least-perfect materials** to recycle. **Only 9% of the plastic** ever produced has been recycled, and **40% of plastic is designed to throw away** after one use. However, new bans on plastic in LMICs are spurring innovation and action.



# Trends in plastic waste management: cities, villages & oceans

## Formalise waste picking

**Plastics Bank:** offers locals in coastal communities a premium for their plastic waste.

**Plastics for Change:** provides urban waste workers in India's coastal areas with access to fair market prices for plastic.

**Coliba:** Coliba collects plastic waste through a mobile app and a team of employed waste collectors. Users receive MTN reward points

## Plastics to New Material

**Green Antz:** makes eco-bricks using plastic sachets mixed with cement, sand and gravel.



**EcoPost :** recycles plastic waste to make plastic lumber, with numerous industries (e.g., outdoor furniture).



## Outsourcing waste collection

**PACK-KA-CHING:** has a network of recycling units that travel between communities and exchange plastic, paper, metal cans for monetary value.

**Terra Solutions Kenya:** collects waste from households, businesses and factories, which is taken to their decentralised facility and sorted into 45 categories.

## Collecting Data

**DRONES:** Ellipsis Earth maps the distribution of solid waste pollution litter, by collecting accurate data through drone surveying and machine learning.

**MOBILE APPS:** ACTNOW is a free App where users can snap discarded plastic that retains the brand name

**AI:** Dataiku provides non-profits access to Dataiku software and data science resources that's based on AI.

**SATELLITES:** The European Space Agency (ESA) uses satellites to detect and track plastic waste.

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## Outsourcing waste collection

**PACK-KA-CHING:** has a network of **Green Antz** that travel between communities and exchange plastic, paper, metal cans for monetary value.

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## Plastics to New Material

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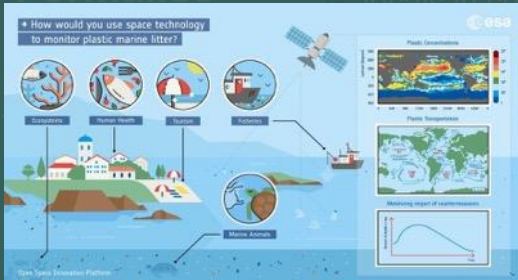
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European Space Agency



Ellipsis Earth



Clean Swell



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E-waste is the **fastest growing waste stream** in the world. The global annual e-waste generation reached **53.6 million tonnes** in 2019.

Almost **82%** of this e-waste is handled either by the **informal e-waste sector** or reaches a landfill resulting in complex social challenges in addition to severe environmental impacts

Eggs produced in Accra, Ghana around areas where high processing of informal e-waste, contain **dangerous dioxin levels, 220 times** over the European Food Safety Authority limits .

# E-waste policy and legislation across LMICs



## GSMA E-waste Policy Study in Asia/Africa

- Out of the 85 countries studied, **78% of the countries do not have legally binding regulations** on e-waste.
- **Only 1 country** has a policy (still draft stage) on **mobile waste**. Whereas in other countries this waste element is captured broadly under all 'e-waste' types.
- Telecom Regulators in a very few countries have set guidelines for MNOs to collect mobile waste from customers in their customer centres.





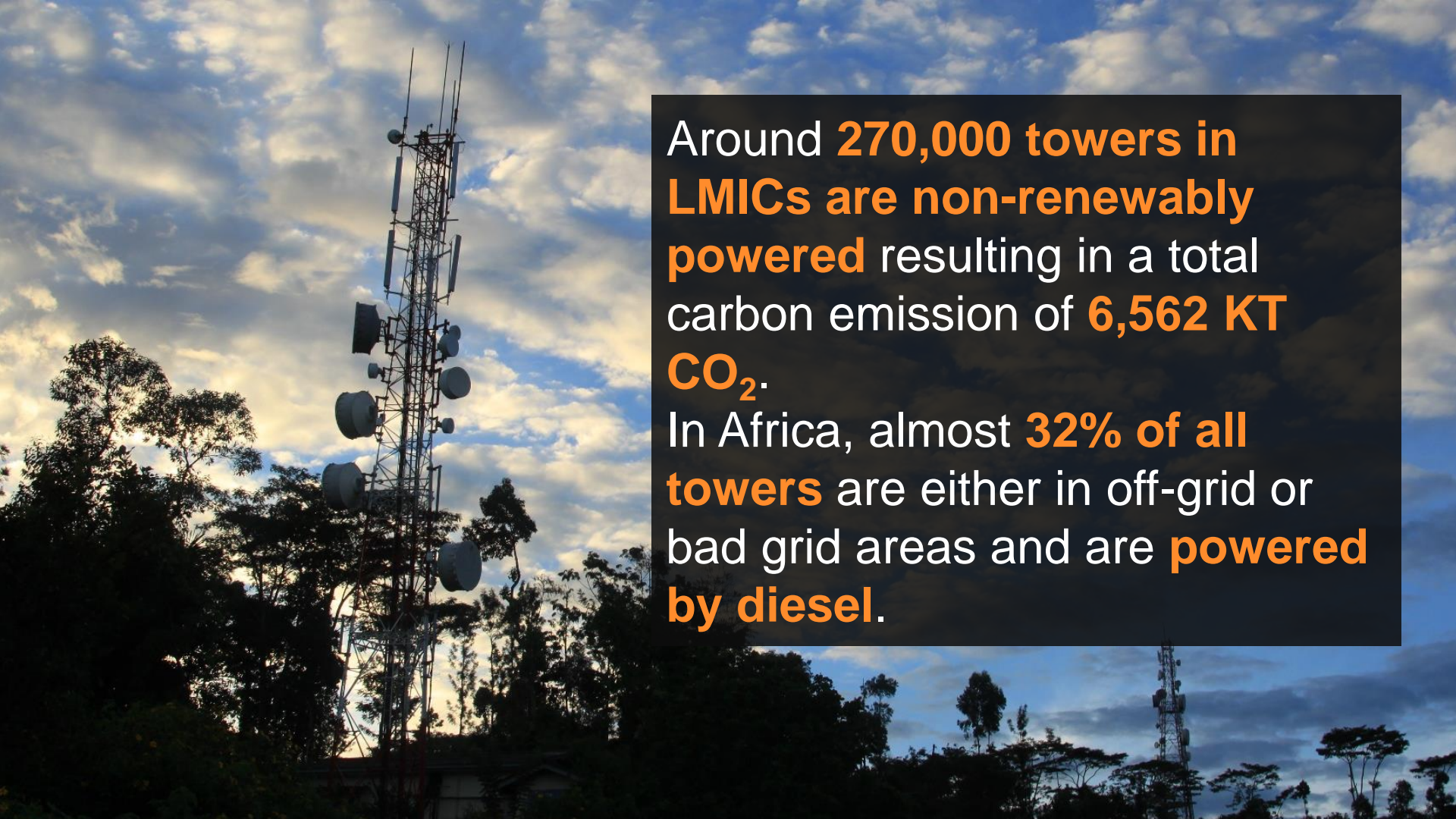
# MNO led voluntary e-waste management efforts:

## GSMA E-waste Policy Study in Asia/Africa

- In 40 out of the 85 countries analysed various voluntary initiatives have been found.
- 67 MNOs are currently engaged in different type of initiatives:
  - 43 are aiming at collecting e-waste
  - 38 are related to customer awareness programs
  - 30 are focusing specifically on collection of mobile phones
  - 25 are related to management of industrial waste from MNO operations
- We have an ongoing weekly blog series that covers the MNO best practices in LMICs.

[Image source](#)





Around **270,000 towers in LMICs are non-renewably powered** resulting in a total carbon emission of **6,562 KT CO<sub>2</sub>**.

In Africa, almost **32% of all towers** are either in off-grid or bad grid areas and are **powered by diesel**.



# Assisting MNOs to convert off-grid & bad-grid sites to RE

## Ongoing scoping study to understand:

- The size of the problem: A model to calculate the
  - Total # of towers
  - Total # of bad-grid & off-grid towers
  - Total carbon emission: Per country.
- Understanding the renewable energy profile/context in LMICs across Asia, Africa and LATAM.
- Detailed stakeholder study on seven selected representative markets understanding the process of converting to renewable energy.



# Engagement opportunities in the **post-COVID** era:

## **Natural Resource Management – Forests:**

Delivering new research to explore how digital technology can support community-led forest management through data collection and analysis, information sharing, and digital payments

## **Plastic Collection and Recycling:**

Identifying opportunities for digital technology to improve the scale and transparency of plastic waste collection and recycling

## **Building Resilience to Climate Risks:**

Understanding how digital technologies can build the capacity of LMICs to adapt and build resilience to climate risks such as extreme weather and sea level rise

## **Switching off-grid towers to renewable Energy:**

Identifying / developing key tools, resources our members and partners could use to increase the rate of switching off-grid sites to RE.

Creating an industry community for thought-leadership on adopting renewable energy.

## **Circularity & E-waste management**

Publishing the e-waste policy tool based on our study.

Continuing engagement in the e-waste working group.



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