



GOGLA e-waste Toolkit

Module 3

The Financials of E-waste management

27 June 2019

Agenda

Duration	Item
5 min	Introduction to the Seminar
40 min	Expert Interview – Federico Magalini (SOFIES). <ul style="list-style-type: none">• Costs of off-grid solar waste, per activity and product category. What does the data say?• How costs vary with different e-waste ‘models’.• Calculating liabilities & forecasting waste.
40 min	Discussion with Fenix & Zola with audience Q&A How much are we paying for e-waste, ideas on access to e-waste and how are costs incorporated into business models.
5 min	Call to action and wrap-up

Welcoming new Working Group co-chair

Greyson Metili

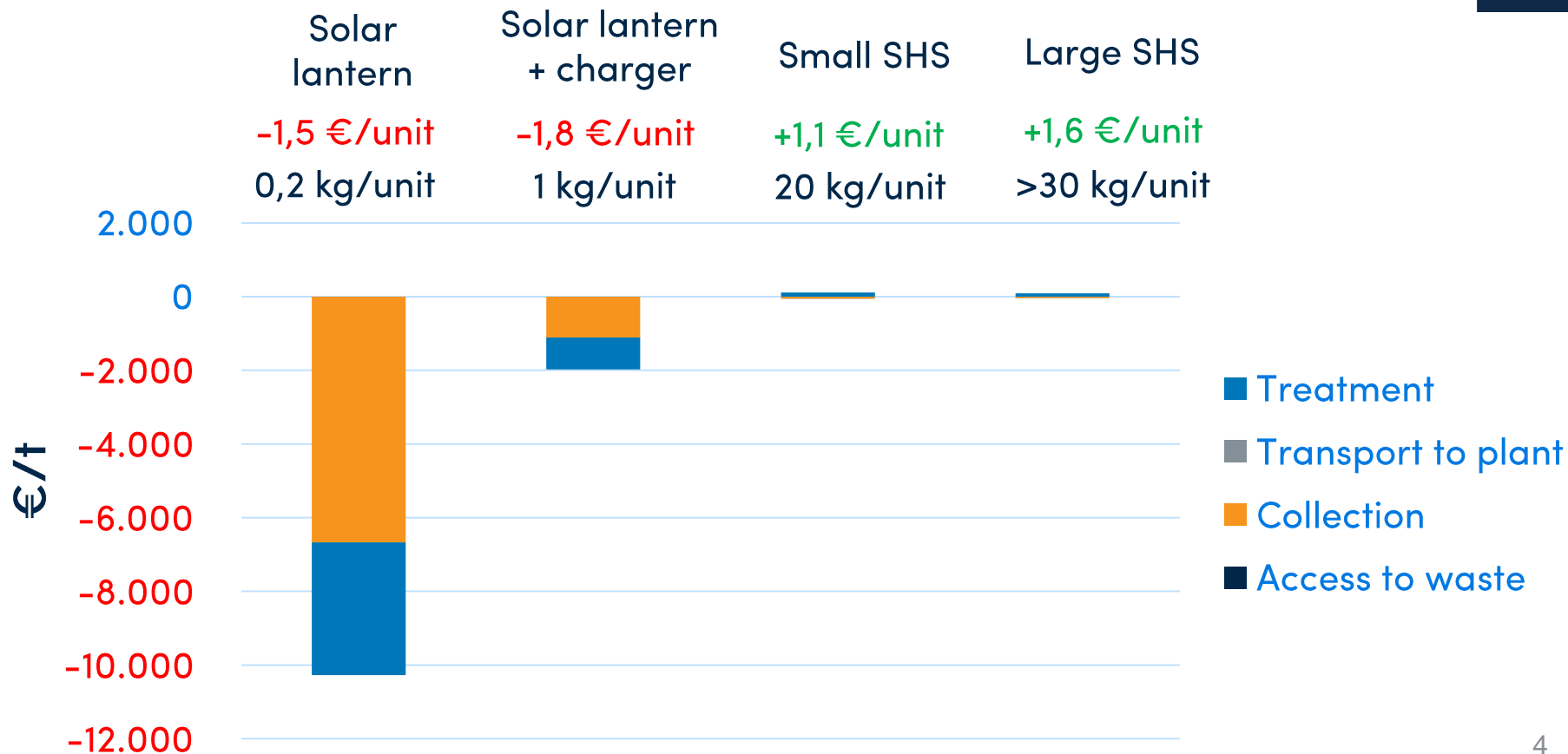
Senior Head of Supply Chain

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End-of-life management cost model



End-of-life management cost model (€/t)



Category	Main materials	Access to waste cost	Collection cost	Transport cost	Intrinsic economic value	Net Treatment cost	Total cost
Off-Grid Solar (PC1)	LFP batteries (67%), LED (20%), Steel (13%)	0	-1	-1	-2,259	-3,537	-3,539
Off-Grid Solar (PC2)	PV modules (45%), Mixed plastics (inc. BFR) (23%), Steel (18%), LFP batteries (11%), LED (3%)	0	-1	-1	-529	-828	-830
Off-Grid Solar (PC4)	Steel (30%), PV Module (29%), Pb battery (30%), Copper (4%), Plastics (6%), PWB (2%)	0	-3	-2.3	149	119	114
Off-Grid Solar (PC7)	Steel (30%), PV Module (29%), Pb battery (30%), Copper (4%), Plastics (6%), PWB (2%)	0	-1	-1	149	130	129

Source link:



e-waste management 'models' & cost structures

Mandatory take-back & recycling

This is the implementation of specific e-waste regulations. It's important to make clear roles and responsibilities, particularly in respect of daily operations and also financing implications

Financial obligation defined by regulation

Voluntary Compliance Scheme – Industry collaboration

e.g. In Europe (before the inclusion of PV panels in the scope of the WEEE Directive) industry took a voluntary approach to ensure proper collection and recycling of PV modules.

Compliance Scheme costs

Business as usual – Individual responsibility

E-waste management is left to the activity of few formal recyclers: the costs for proper collection and treatment of the products has to be paid by the company disposing of the product.

Informal collectors and recyclers extract valuable components for the refurbishment market, neglecting the proper disposal or treatment of other fractions.

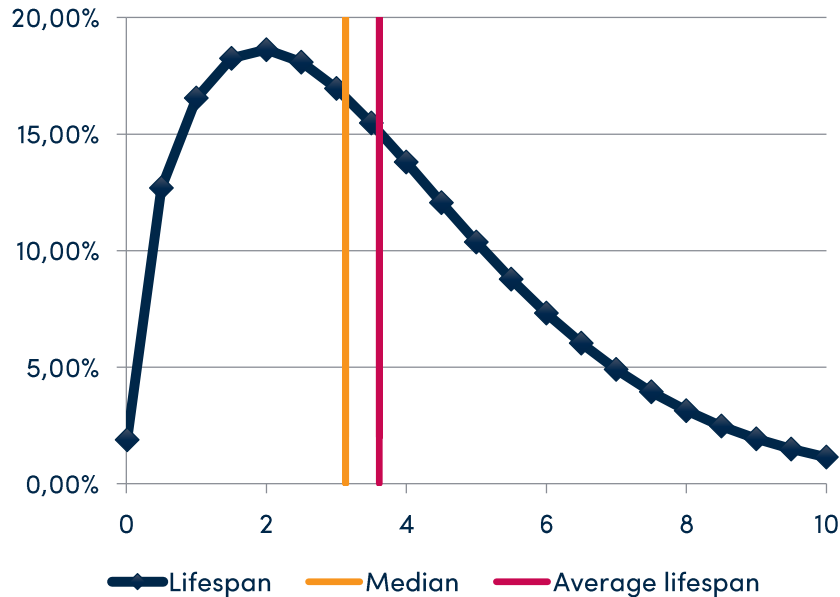
Recycling costs

FORMULA FOR PRODUCER OBLIGATION CALCULATION

- **Market share calculation** for a producer is the weight of products put on the market by an individual producer in his product type **divided by** the total weight of products put on the market by all producers in this **product type**.
- **Obligation calculation** for a producer is total reported tonnage treated by **product type multiplied by** the individual producers market share.

Source: THE ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION (ELECTRICAL AND ELECTRONIC WASTE MANAGEMENT) REGULATIONS, 2019. “E-waste Bill” in Kenya).

$$\text{Waste volume (kg)} = \text{Product sales} \times \text{Weight} \times \text{Lifespan}$$



Complicating factors:

- Components have different lifespans
- Informal market for repair and reuse
- Take-back rate



Athina Kyriakopoulou
E-waste Toolkit
Consultant



Andrew Loebus
Africa Operations Manager
Fenix Intl.



Corey Barnes-Covenant
Supply Chain Manager
Zola Electric

July 16–18

Nairobi Garage (Kilimani)

Aim: bring the industry together to create new **ideas**, **partnerships** and **projects** across a wide range of topics.

Sign up at

www.gogla.org/events/e-waste-festival

Day one, Tuesday July 16

- E-waste workshop: focus on **take-back**, **storage and handling** as well as **transport**.

Day two, Wednesday July 17

- Kenya e-waste policy engagement (am)
- Global LEAP solar e-waste challenge (pm)
- Evening Social

Day three, Thursday July 18

- Visit to the WEEE Centre Kenya

Briefing Note 2. Design for Reduction of Waste.



www.gogla.org/e-waste



Why did the off-grid solar company have a hard time with the e-waste cost calculation?

Because of the problematic fractions.