Incentive based collection of e-waste – Results from pilot implementation in Ghana

Andreas Manhart, Bennett Akuffo, Sampson Atiemo, Kweku Attafuah-Wadee, Johanna Jacobs, Alexander Batteiger
Incentive based collection of e-waste: Results from pilot implementation in Ghana
Background & introduction

• One of the most pressing pollution issues in informal e-waste recycling.

• Aim: Earn money from the sale of copper & aluminium.

• Alternative treatment options more costly

Incentive based collection of e-waste: Results from pilot implementation in Ghana
Background & introduction

- Establishment of a National E-waste Fund
- Filled by e-waste levies on imported equipment
- To be used for sound management of e-waste and to reduce negative impacts.
- Amongst others, also for “incentives for collection, transportation and disposal”

Main objectives of this project module:
- To pilot incentive based collection of worst polluting e-waste types
Starting point

• First in-field test of Piloting Payment System with a handover centre

Sub-objectives

• Gain practical experiences how the informal scrap market will react on such an incentive system.

• Test and evaluate various practical issues (stakeholder interaction, incentive levels, transaction modalities...).

• Document & share lessons-learned with policy-makers (MESTI, EPA, KfW...).
Concept overview

Incentive based collection of e-waste: Results from pilot implementation in Ghana

Payment made for GHS 430.00 to [Bank Account Details]. Current Balance: GHS 1070.01. Available Balance: GHS 1070.01. Reference: GreenAd. Transaction ID: 4137031401. Fee charged: GHS 0.00.

SMS 12:11

Collectors

Develop & adjust methodology

Receive compens.

Deliver cables

cables

GIZ - CWR - ELECTRIC CABLE ANALYSIS

<table>
<thead>
<tr>
<th>DATE</th>
<th>E-CABLE</th>
<th>E-CABLE</th>
<th>COPPER</th>
<th>ALUMINIUM</th>
<th>STEEL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>WEIGHT</td>
<td>WEIGHT</td>
<td>Cu</td>
<td>Al</td>
<td>Fe</td>
</tr>
<tr>
<td></td>
<td>KG</td>
<td>KG</td>
<td>KG</td>
<td>KG</td>
<td>KG</td>
</tr>
<tr>
<td>19.07.2018</td>
<td>62.5</td>
<td>19.2</td>
<td>0.8</td>
<td>0.5</td>
<td>0.8</td>
</tr>
<tr>
<td>100</td>
<td>30.7</td>
<td>1.3</td>
<td>0.8</td>
<td>0.8</td>
<td>0.8</td>
</tr>
</tbody>
</table>

City Waste Recycling LTD.
1) Delivery
Transaction process

2) Quality control & grading

Incentive based collection of e-waste: Results from pilot implementation in Ghana
Transaction process

3) Weighing & photo documentation
Incentive based collection of e-waste: Results from pilot implementation in Ghana

4) Data recording & mobile money payment

- Transaction Number: 1067
- Date of Transaction: 4 Jul 2019
- Geo location: 5.5540175, -0.2254441
- Height: 63.20000076293945

9. Type of cable received:
   - High grade copper cables 6.7GHS/lb
   - Low grade copper cables (thin copper cores) 4.05GHS/lb
   - Aluminum cables (aluminum core) 1.8 GHS/lb
   - Steel cables & plugs: 0.5 GHS/lb

10. Weight of Cables received: 22.2

11. Picture of Cables received with weight shown on scale
5) Storage & transport to recycler

Incentive based collection of e-waste: Results from pilot implementation in Ghana
Incentive based collection of e-waste: Results from pilot implementation in Ghana

Incentive level high-grade cables [€/kg]
Incentive level low-grade cables [€/kg]
Incentive level aluminium cables [€/kg]
Incentive level plugs & others [€/kg]

System down due to liquidity issues
System down for restructuring cable grading & processes
Market response

Incentive based collection of e-waste: Results from pilot implementation in Ghana

Low incentive levels

Liquidity issues

Liquidity issues

Rainy season

Liquidity issues

Ramadan
Results

➢ 10 months of operation (22.10.18 – 20.08.19)
➢ 27.3 t of cables collected & channeled to sound recycling
➢ 1389 individual transactions
➢ Significant emission reduction
➢ Established alternative to burning that does not discriminate small scale collectors and recyclers
Incentive based collection is a meaningful way to link informal collectors to sound recycling and to avoid polluting practices carried-out under informal conditions.

Beneficiaries are:

- Collectors → higher prices for some e-waste types
- Formal recyclers → stable access to e-waste
- Society → Reduced pollution
Suitable for waste types that:

- are associated with high environmental impacts if not managed properly
- can easily distinguished from other waste types
- where standards, auditing & sanctions are prone to failure (informal sector settings)

Ongoing financing needed → e.g. EPR-based financing

Very good monitoring of costs and results possible (collected volumes & emission reductions)
Thank you for your attention!

Bennett Akuffo  
M: +233 244203401  
E: bennettakuffo@yahoo.com

Andreas Manhart  
M: +491605881625  
E: a.manhart@oeko.de

Dr. Sampson Atiemo  
M: +233 246184766  
E: atiemosam@gmail.com

Alexander Batteiger  
M: +233 556640368  
E: alexander.batteiger@giz.de