

Second Life EV Batteries

Second life: repurposing of lithium-ion Electric Vehicle Batteries

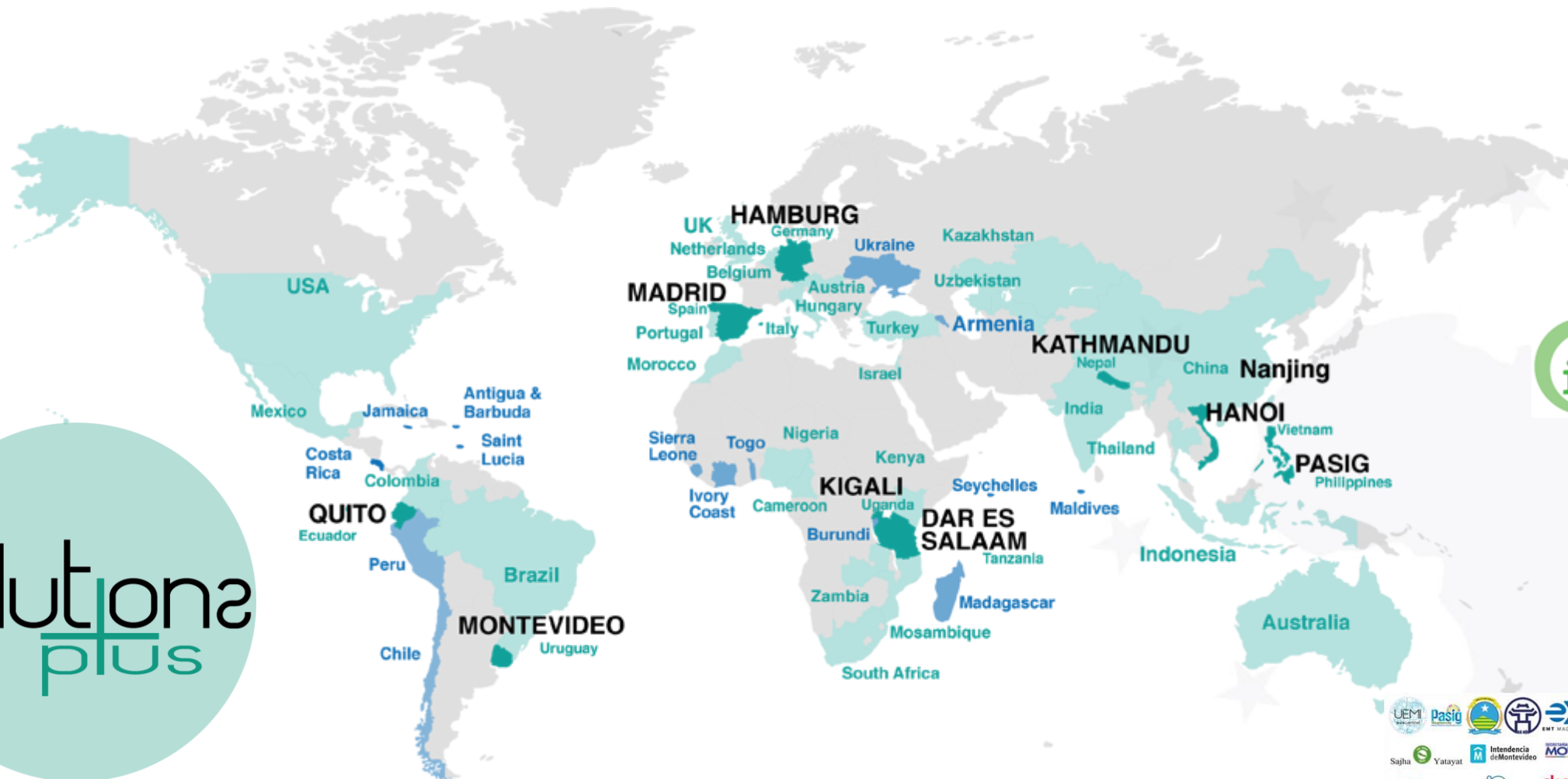


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In this video you will learn:

- What is end of life management of EV batteries
- How to move towards circularity in EV batteries
- The basics of repurposing EV batteries

The logo features a stylized map of Africa in green and yellow, surrounded by blue stars, with a red and yellow lightning bolt striking the top right corner.

SESA



End-of-life management of EV batteries

- ❑ Li-ion battery to dominate the electric vehicle market for the next 10 years
- ❑ 100-120 GWh of EV batteries retired by 2030, comparable to current annual battery production (IEA, 2020)

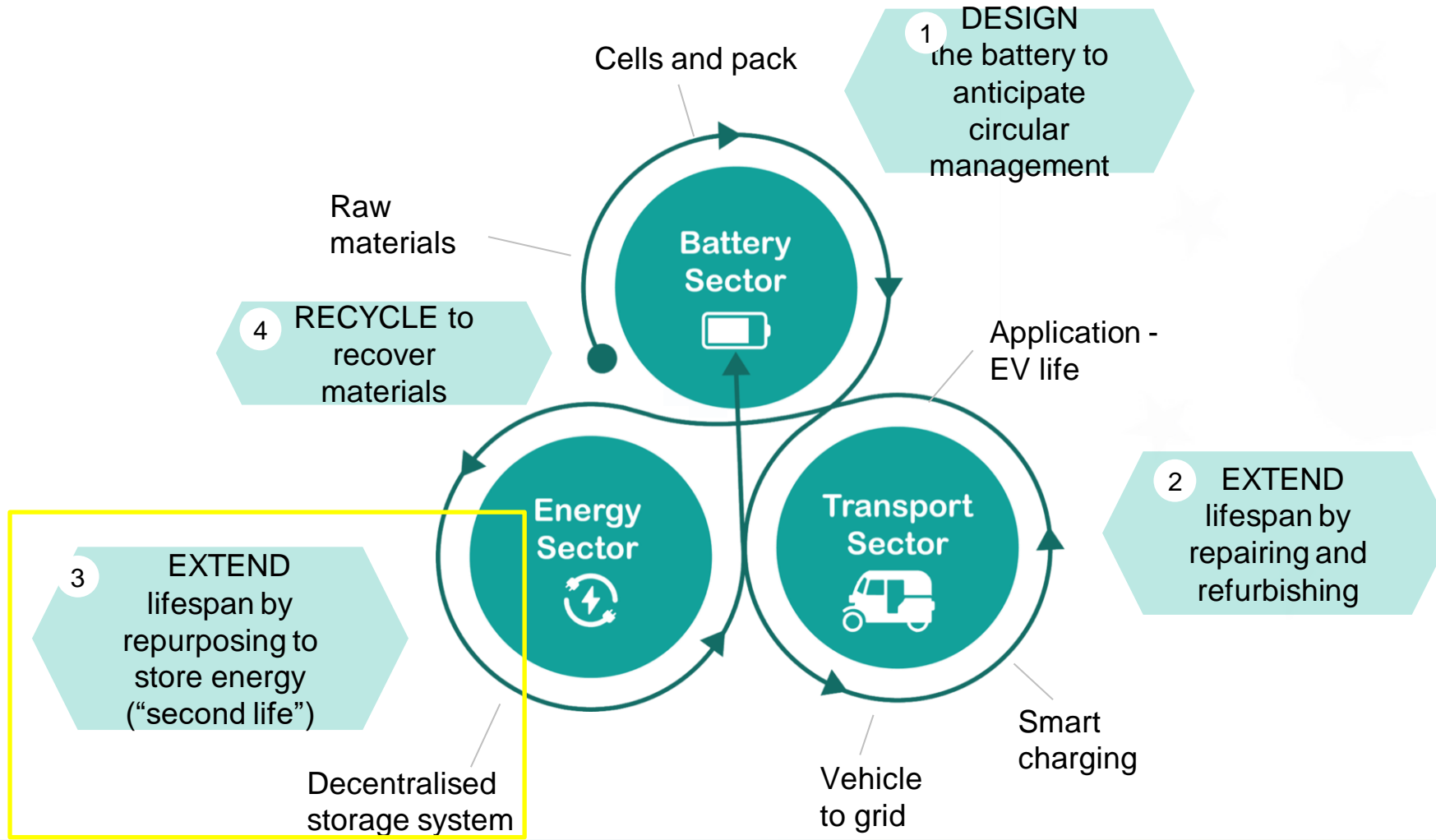
- ❑ Policies and practices so far focussed on other types of e-waste and lead-acid batteries



Need for a circular management of batteries

Vital to make the best use of refurbishing, repurposing, and recycling options

Towards Circularity



(Authors, adapted from World Economic Forum/GBA, 2019)



Repurposing



Portland General Electric, 2013

Second life as energy storage systems (ESS)

Grid support and management

Storage and integration of renewables

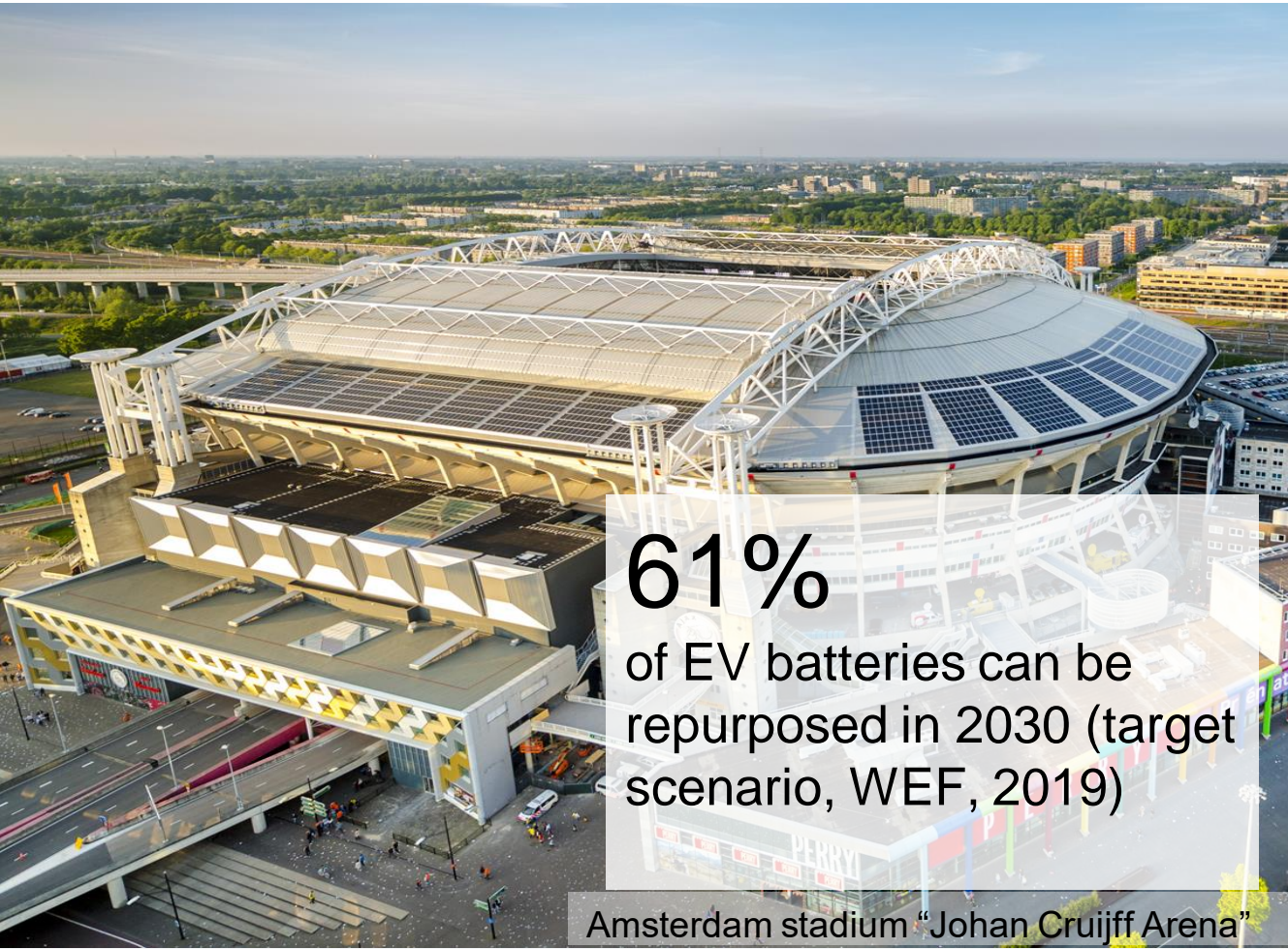


Power back-up

Decentralized energy solutions



Repurposing



Environmental gains

- Postponing recycling
- Substitute to new ESS







Economic gains

- Discount on EV battery costs
- Reducing the costs of ESS
- Employment opportunities
- New business models



Challenges and answers

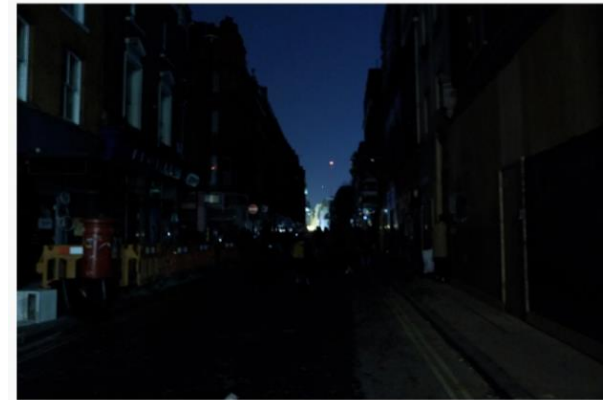
Challenges	Lack of data 	Safety & liability 	Economics 
Possible answers	<ul style="list-style-type: none"> - A “battery passport” displaying and sharing information on origin, chemistry, SoH - Supporting business models with close monitoring of the battery’s first life performance - Foster exchange of data 	<ul style="list-style-type: none"> - Technical performance standards, safety norms, certification - International dialogue on product design, technical specifications, harmonization of transport rules - Legal clarification of liability 	<ul style="list-style-type: none"> - Demonstration projects and disseminated data - Decreasing repurposing costs: streamlining, regional integration, economies of scale - Maximize battery collection rates - Improving economics of renewable energies
Instruments	Regulatory & legal, institutional, financial, demonstration actions, R&D, communication 		

E2Ws in sub-Saharan Africa: enabling conditions



Battery-as-a-Service
model for electric two-
wheelers

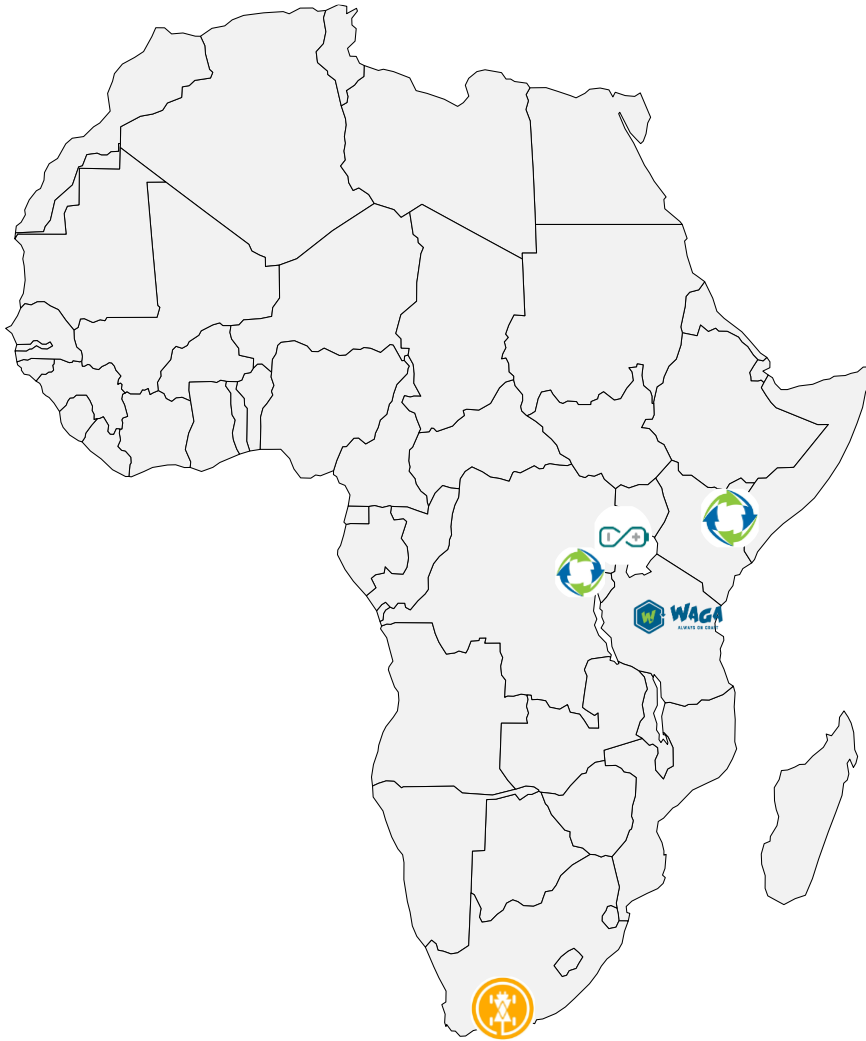
Easier conditions for
sustainable End-of-Life
management



Energy Storage Systems to address
power cuts and integrate renewables



Some examples of Innovative companies



SLS Energy

Energy storage-as-a-service using repurposed battery cells for telecom operators



Enviroserve

Entire supply chain from collecting up to recycling
Partnered with  AMPERSAND



uYilo

National e-mobility programme with technical facilities for accredited battery testing, working on 2nd life



WAGA

Re-using li-ion batteries and producing durable and affordable battery packs

And leverage on the experience from numerous other organisations working on e-waste, such as WEEE Center, Bodawerk, M-Kopa, WeTu



Regional Needs



The poster for the Regional Training Program Africa 2022 features the logos of 'solutions plus' and 'gef' at the top left. The title 'REGIONAL TRAINING PROGRAM AFRICA 2022' is prominently displayed. Below it, the subtitle 'Key Aspects towards the advancement of e-mobility in the region' is present. The program is divided into two parts: 'Part 1: Electric 2/3-Wheeler Battery Solutions' (17th - 18th October 2022, 14:00 PM-16:00 PM) and 'Part 2: End-of-Life Management of EV batteries' (1-2 November 2022, 14:00 PM-16:00 PM). A central graphic shows a circular arrow cycle around a battery icon. A QR code is located at the bottom right of the main graphic. The website 'www.solutionsplus.eu' is at the top right. At the bottom, it states '100% virtual on Zoom: https://www.solutionsplus.eu/regionaltraining2022' and lists several partner organizations including UN-Habitat, UN Women, UEM, Wuppertal Institut, DART, FIC, ITDP, PlusNet, and STELLANTIS.

solutions plus
gef

REGIONAL TRAINING PROGRAM
AFRICA 2022

Key Aspects towards the advancement of e-mobility in the region

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17th - 18th October 2022, from 14:00 PM-16:00 PM (East Africa Time)

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100% virtual on Zoom:
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In collaboration with
UN-HABITAT FOR A BETTER URBAN FUTURE
UN WOMEN
UEM
Wuppertal Institut
DART
FIC
ITDP
PLUSNET
STELLANTIS



- Develop local value chains in Africa
- Huge opportunity of Second life EV batteries in Africa cost-wise

Technical challenges

- Supply of EV batteries
- Data, safety & liability

Financial challenges

- Business model
- Awareness raising with potential customers

Pathways toward improvement

- Various forms of collaborative approaches
- Regulatory leverage
- Investments
- Capacity building & awareness raising



THANK YOU

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