Printed Electronics Helix Launch Event

21 September

The REFORM Project for the environmental and sustainability challenges around functional electronics,

Yolanda Alesanco, CIDETEC

REFORM

cidetec
surface engineering

Crowdhelix
COLLABORATION INTELLIGENCE

www.reform.com

01

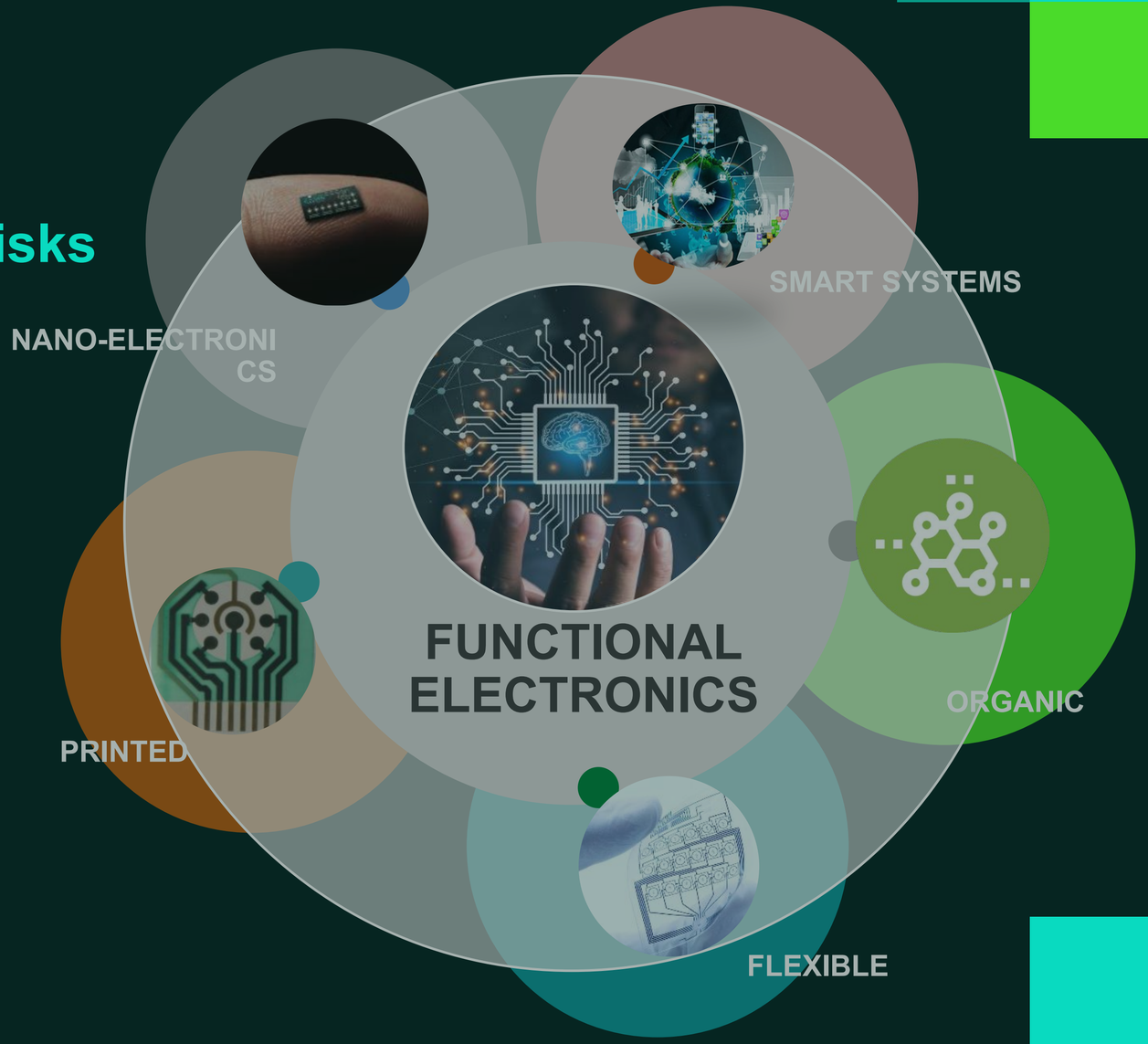
Functional Electronics - Opportunities & Risks

Opportunities

- Transversal enabler of European digital transformation
- Support a multitude of key enabling technology advances
- Total market will grow to $74 billion in 2030
- (IDTechEx Research)

Risks

- Environmental and resource impact



02

Functional Electronics - Environmental impact

- **Increasing demand on electronics and ever shorter product lifecycles** → generation of more e-waste
- Waste electrical and electronic equipment (WEEE) is **considered one of the fastest-growing waste streams** in the EU and globally
- In 2019, approximately 53.6 Mt of e-waste were generated, and it is increasing at an alarming rate of 2 Mt per year
- Only around 20–25% of e-waste is assumed to be formally recycled
- Europe: 15 kg e-waste generated for every person in 2019

If Europe is going to take the global lead in functional electronics → ensure that do not become the electronic-waste problem of the future

Fuente: Iberdrola

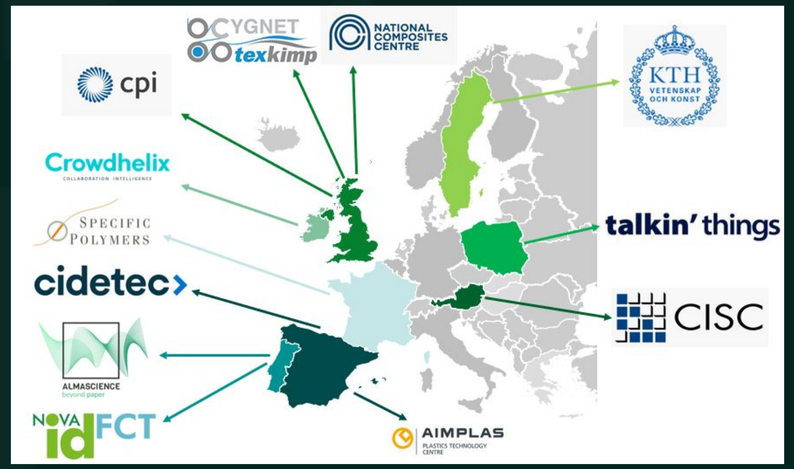
cidetec
surface engineering

03

REFORM Project - Concept & Consortium

- Address the environmental and sustainability challenges around conventional functional electronics
- Use ecodesign principles to ensure:

✔ meet the requirements of multiple high-performance applications
✔ meet societal and environmental needs for sustainability



FUNDING 4,993,610.00 €

European Union Horizon Europe (HORIZON): 3,588,155.75 €

UK partners: 1,405,454.25 €

Start: 1st January 2023

End: 30st June 2026

42 months

8 Countries

6 RTO
5 SME
1 UNI

12 Partners

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04

REFORM Project – main objectives

- Develop environmentally benign electronic ‘building blocks’ focusing on green, bio-derived

Conductive inks

Flexible substrates

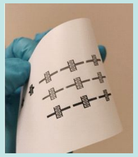
Adhesives

→

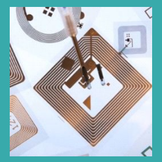
Fully organic conductive inks
Cellulose-based electrolytes
Cellulose-based substrates
Recyclable thermoset 3R composite

Debondable adhesives

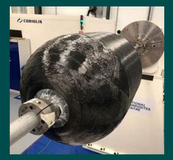
- Integrate into industry-led functional electronics systems, supported by innovations in conformance testing and material recovery methods.



Metal-free on-paper microsupercapacitors



RFID tags for smart logistics



Embedded pressure vessel sensors

Thanks

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