



Beta

Biodiversitat, Ecologia,
Tecnologia Ambiental i Alimentària

RE|FLOW
EUROPEAN TRAINING NETWORK



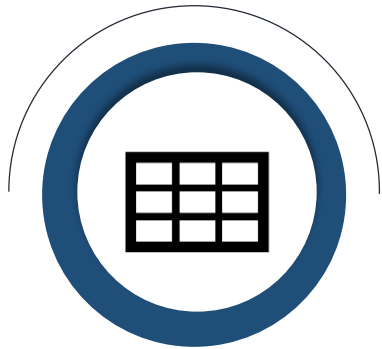
UVIC
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Innovative multiple resource recovery pathways from EBPR wastewater treatment derived sludge

Pablo Martín Binder

Pablomartin.binder1@uvic.cat

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Sustainable Solid Waste
Management
Corfu, 15 - 18 June 2022



00

General Framework

Circular Bioeconomy

01

General Objective

Multiple Valorization opportunities from EBPR

Sludge

02

Experimental Design

Raw material and identification of novel pathways

03

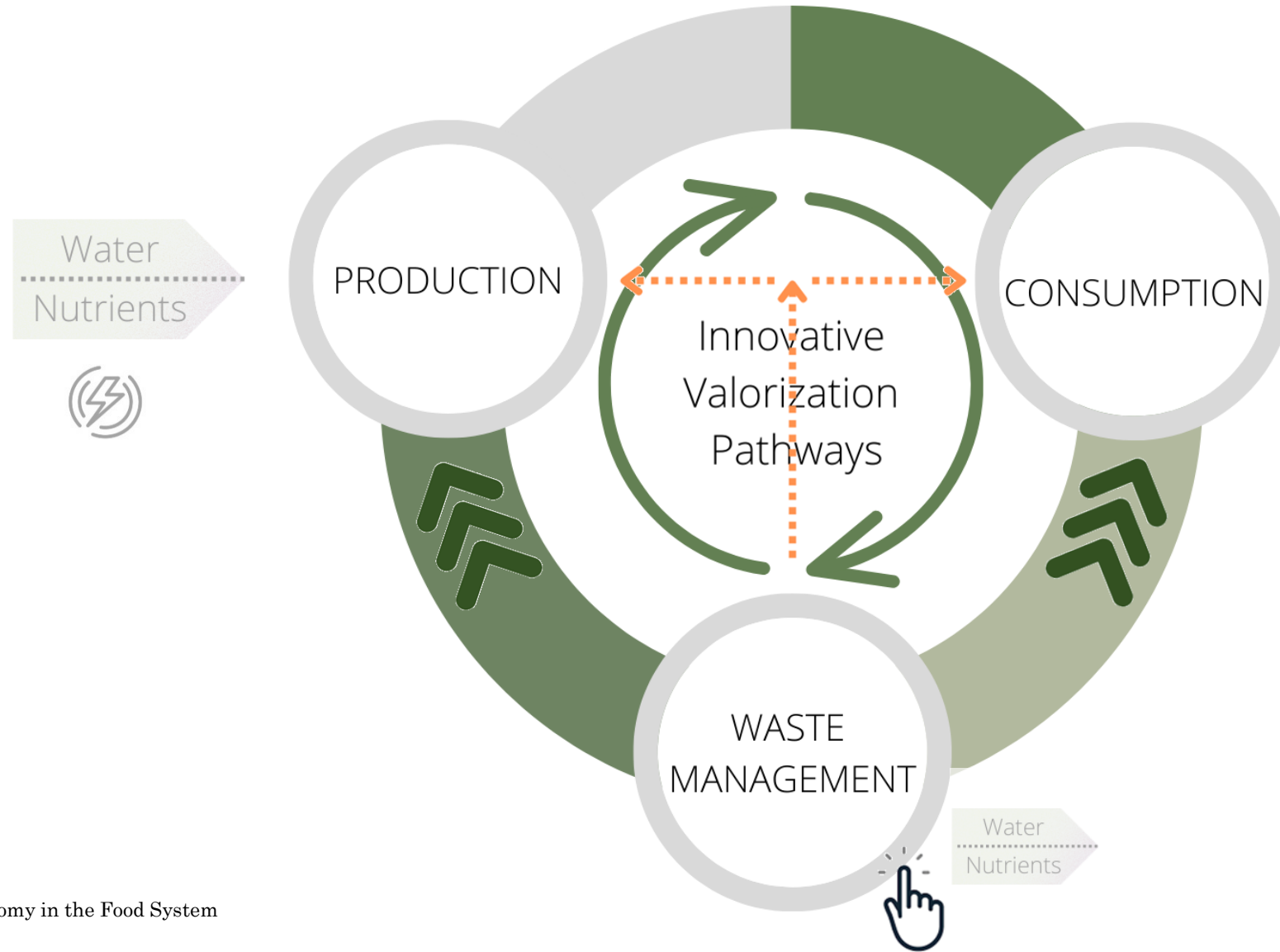
Main Results

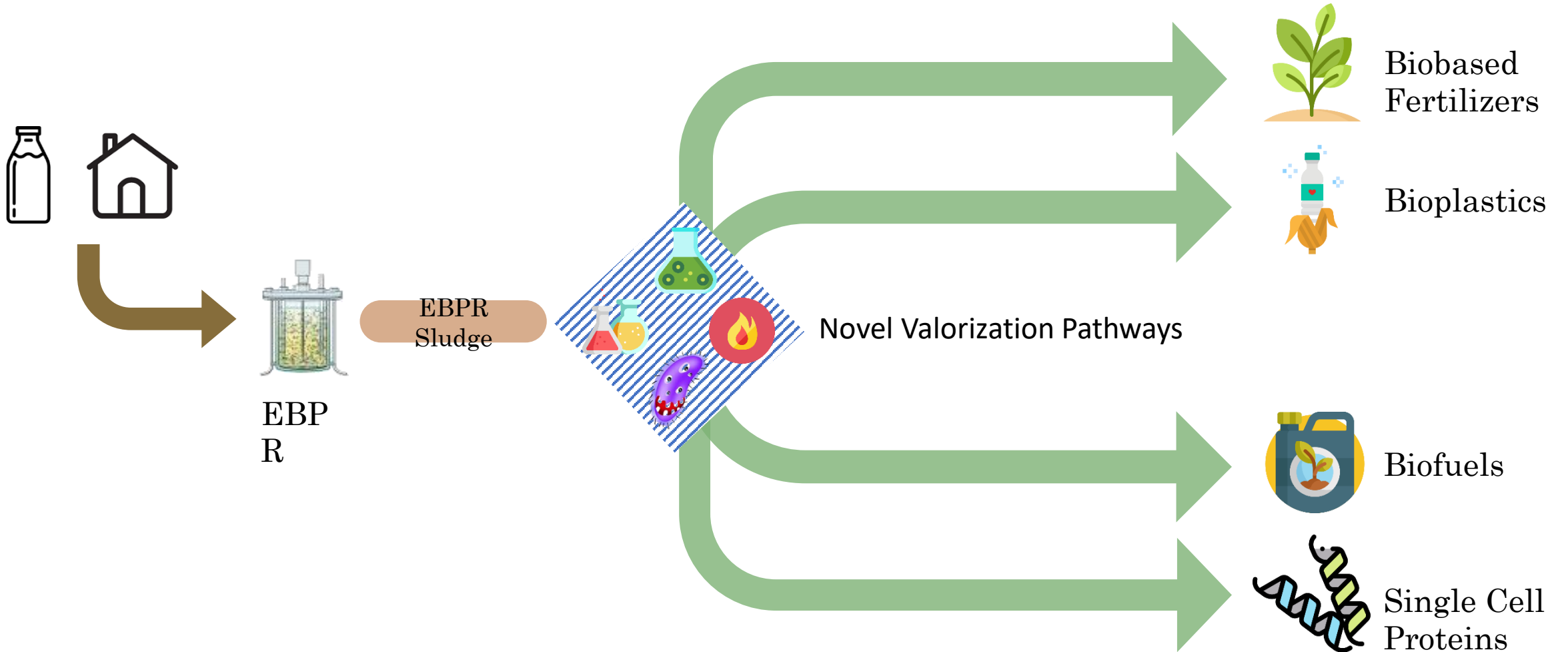
Value added products from EBPR sludge

04

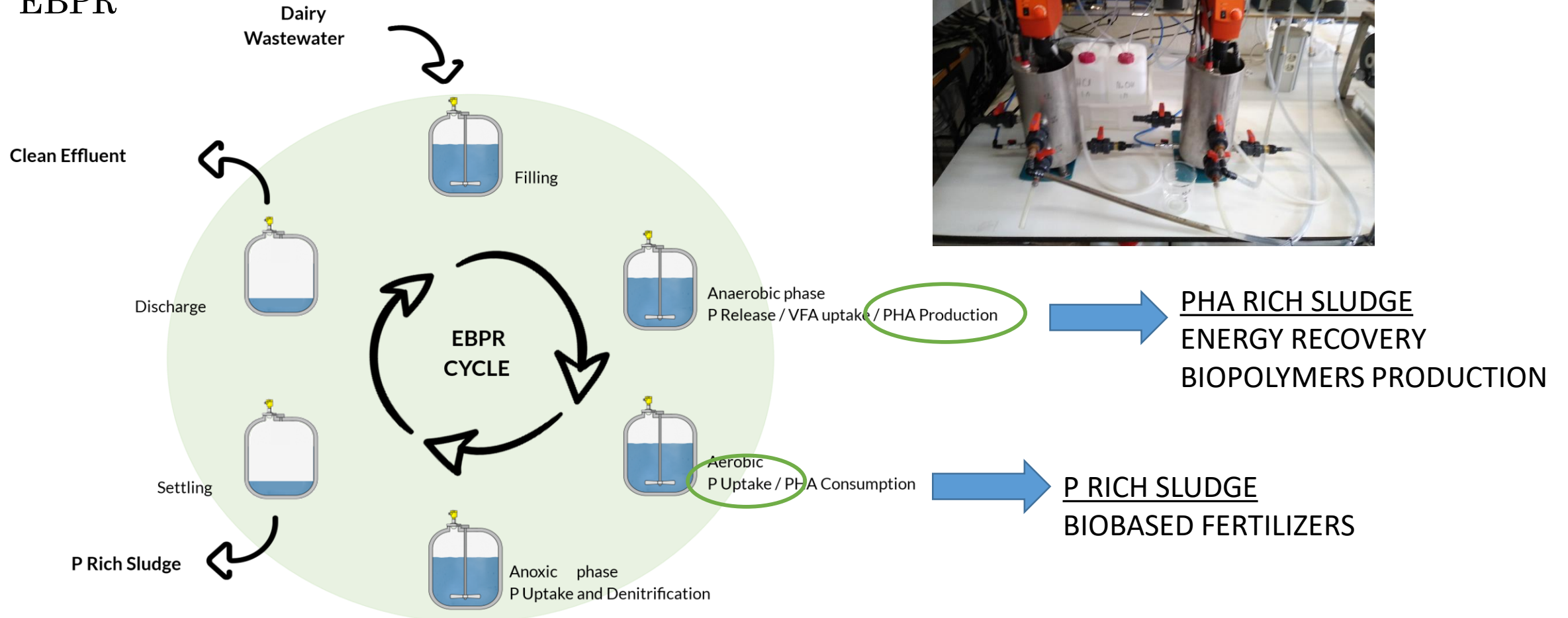
Conclusions and discussion

Strengths, gaps and ideas



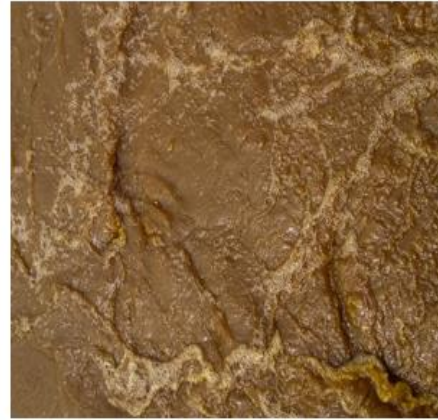


1. REAL DAIRY WASTEWATER - LAB SCALE SBR-
EBPR



2. DOMESTIC FULL SCALE EBPR (AEROBIC)

- PHA Content



Raw sludge



105°C Dried sludge



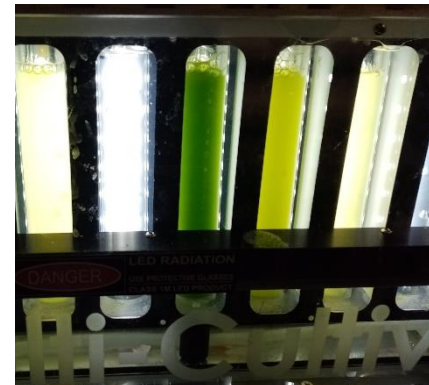
850°C Sludge ashes

- Nutrient content

- BBF's
- Growing Medium



Microalgae



Purple Phototrophic Bacteria





N (% Vs TS)

2,51%

5,70%

7,68%

P (% Vs TS)

1,11%

4,72%

4,22%

K (% Vs TS)

0,31%

0,25%

0,37%

PHA
(% Vs TS)

8%

4%

42%

HHV (MJ/Kg)

18 - 21

10 - 12

21 - 23

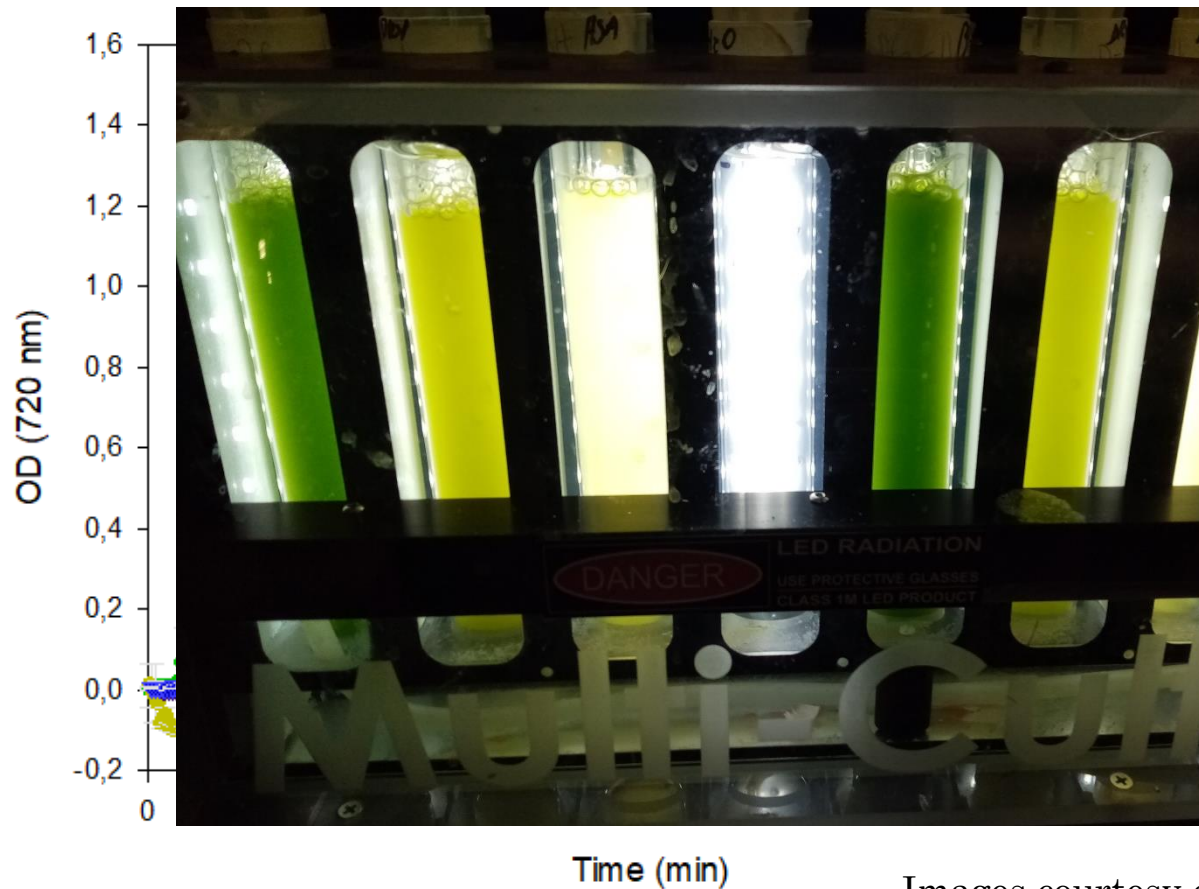
Metals

Pathogens

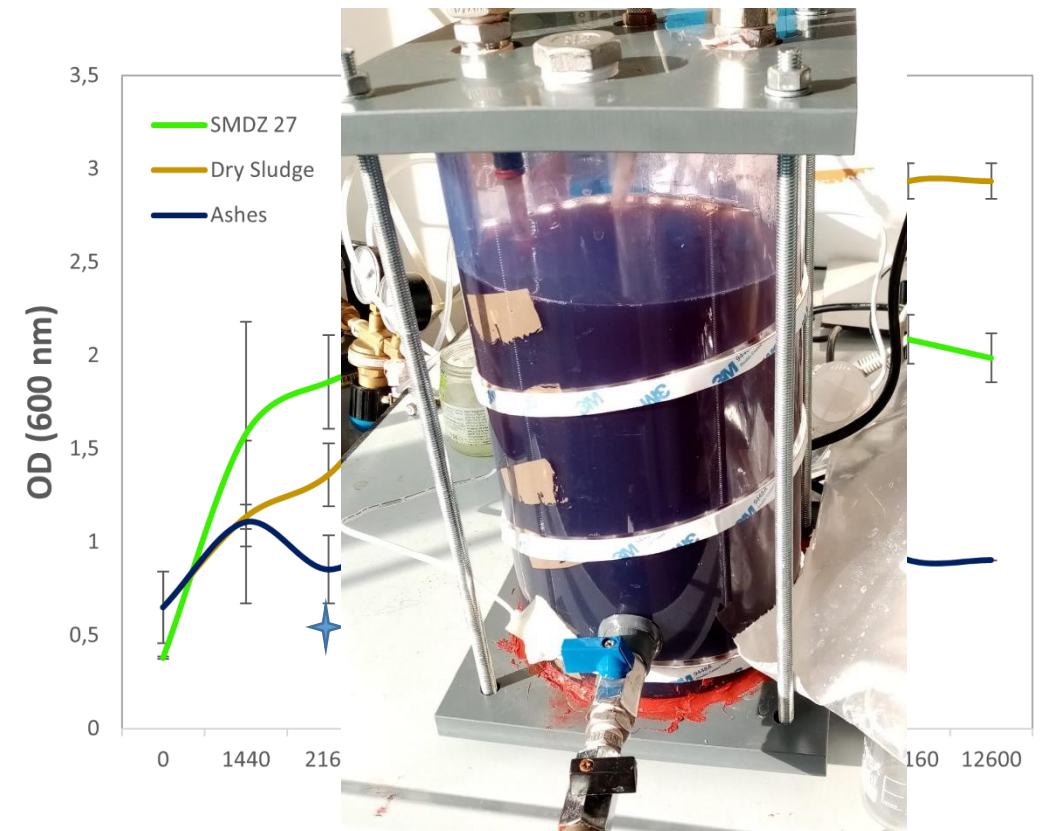
EU
2019/1009

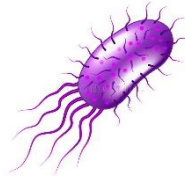
PFC 1(A)(I): SOLID ORGANIC FERTILISER
PFC 3(A): ORGANIC SOIL IMPROVER
PFC 4: GROWING MEDIUM
PFC 6(B): NON MICROBIAL PLANT BIOESTIMULANT
PFC 7: FERTILIZING PRODUCT BLEND

MA cultures (*Chlorella sorokiniana*)



PPB cultures (*Rhodospseudomonas palustris*)





Yield
(g L⁻¹ d⁻¹)

1,10

0,92

N (% Vs TS)

15,4%

25,1%

P (% Vs TS)

8,1%

0,5%

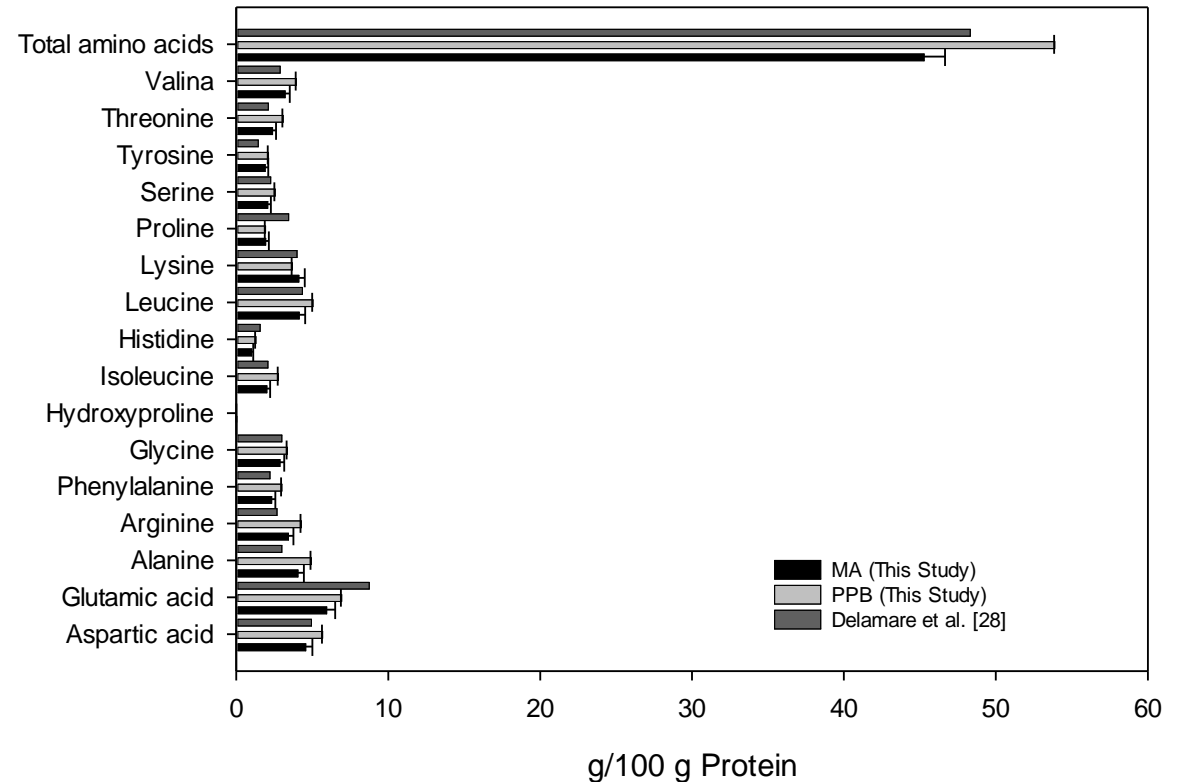
K (% Vs TS)

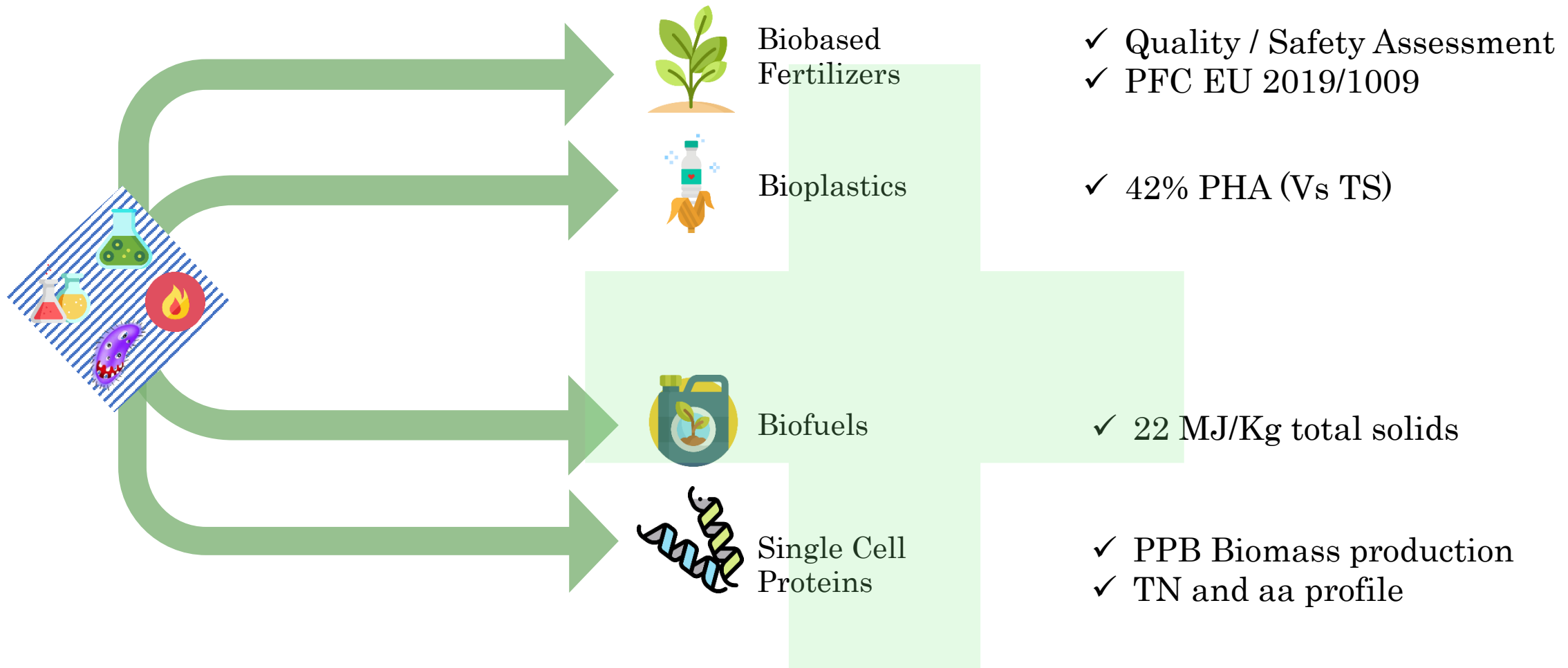
0,4%

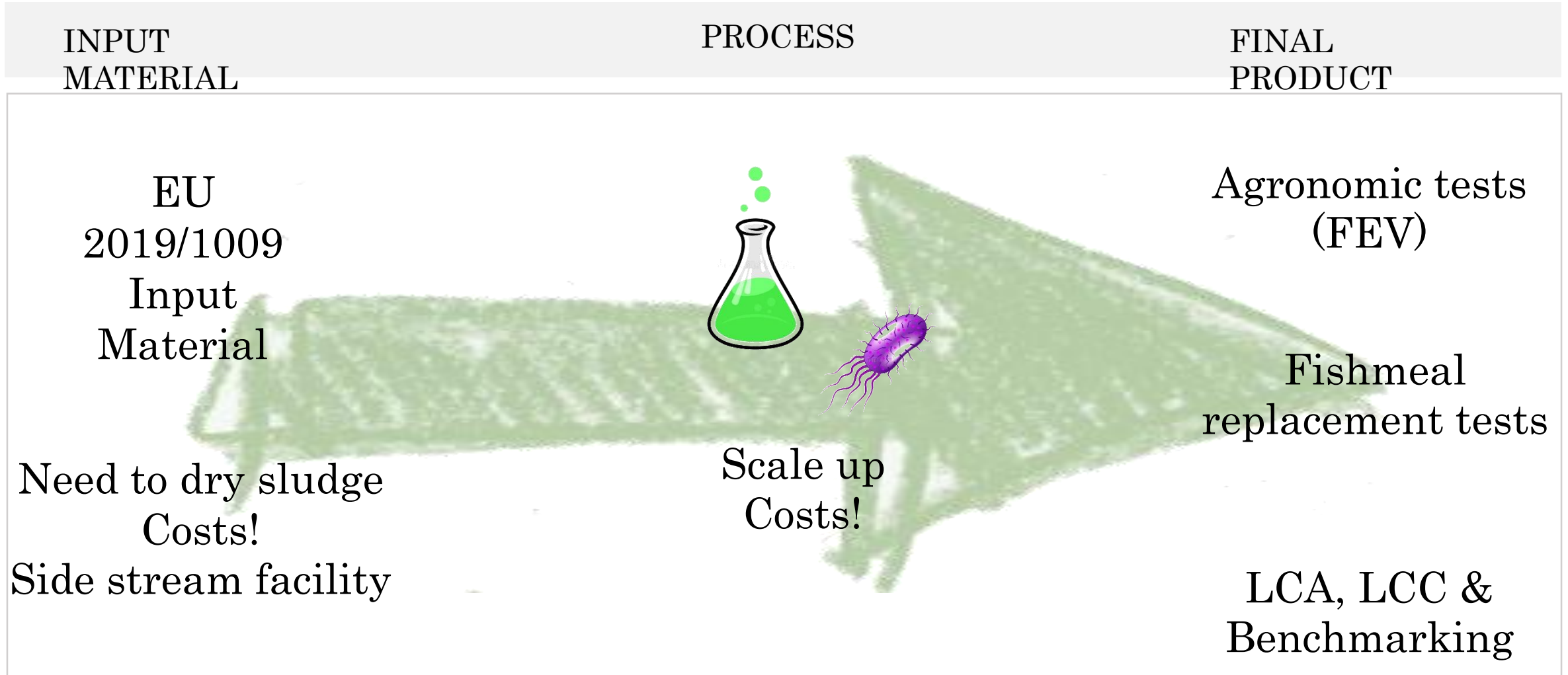
1,5%

BBFs
BIOSTIMULANTS

ANIMAL
FEED









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www.betatechcenter.com

Pablomartin.binder1@uvic.cat

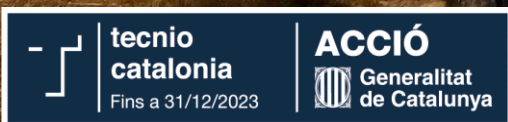
[@Reflow_ESR1](https://twitter.com/Reflow_ESR1) 



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