



EUROPEAN
HACKATHON



Billy

Civil Engineering



Alpar

Computer Science

Technology
Arts Sciences
TH Köln



Sohaib

Energy

ESIEE
PARIS



Yanis

Energy

ESIEE
PARIS



H el ene

Energy

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Team Members

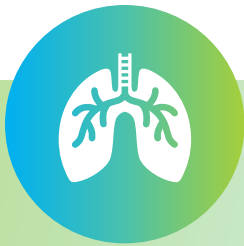
FUTURE Days

SUMMARY

EUROPEAN HACKATHON



How to develop green transport infrastructure ?



Major environmental risk to health

(Stroke, Heart disease, ...)



5 Million deaths from air pollution

(Worldwide, 2020)



Transportation

(29% of 2019 Greenhouse Gas Emissions)

Air pollution – The silent killer



Green'inder

Collect, rince, drive : a safe way to capture CO2



- E-Bus dimension :
3.5 x 10 m
- Rectangular tube :
7 x 2.5 x 0,25 m
- Rectangular tube : adsorption
of CO2 (Aluminium)



Silica Gel

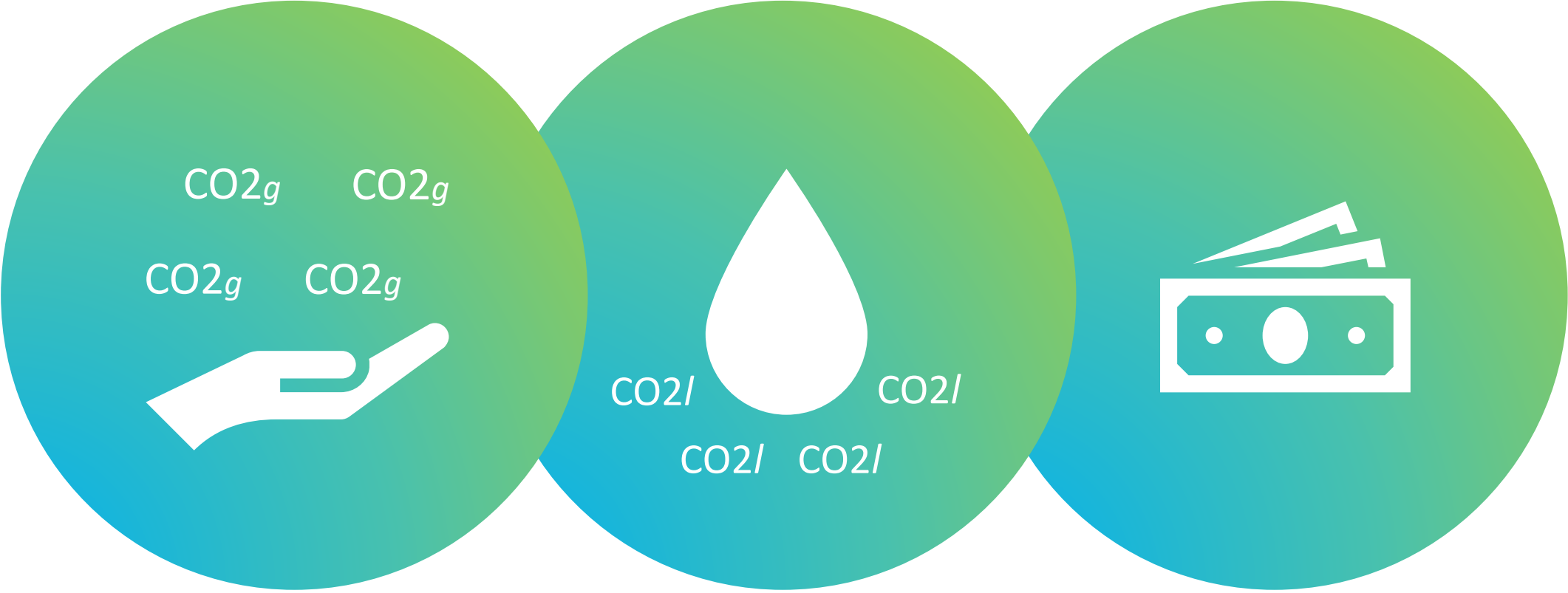
- Weight : 25 kg
- Length : 1.5 m



PEI (POLYETHERIMIDE) RESIN (IONE EXCHANGE)

- Adsorb CO₂ → CO₂ liquid
- Capacity of adsorption : 9600 g/m³ of CO₂ (efficiency : 20 %)
- Rubber material
- Length : 4 m

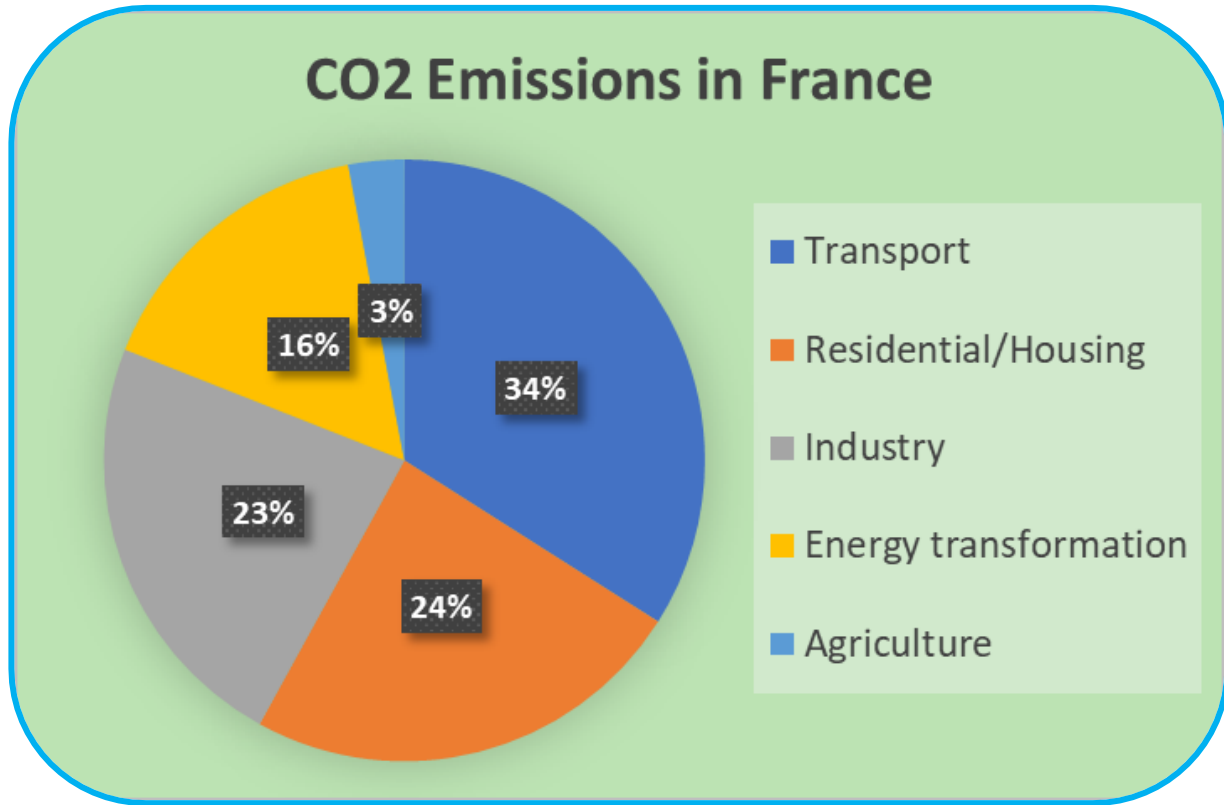




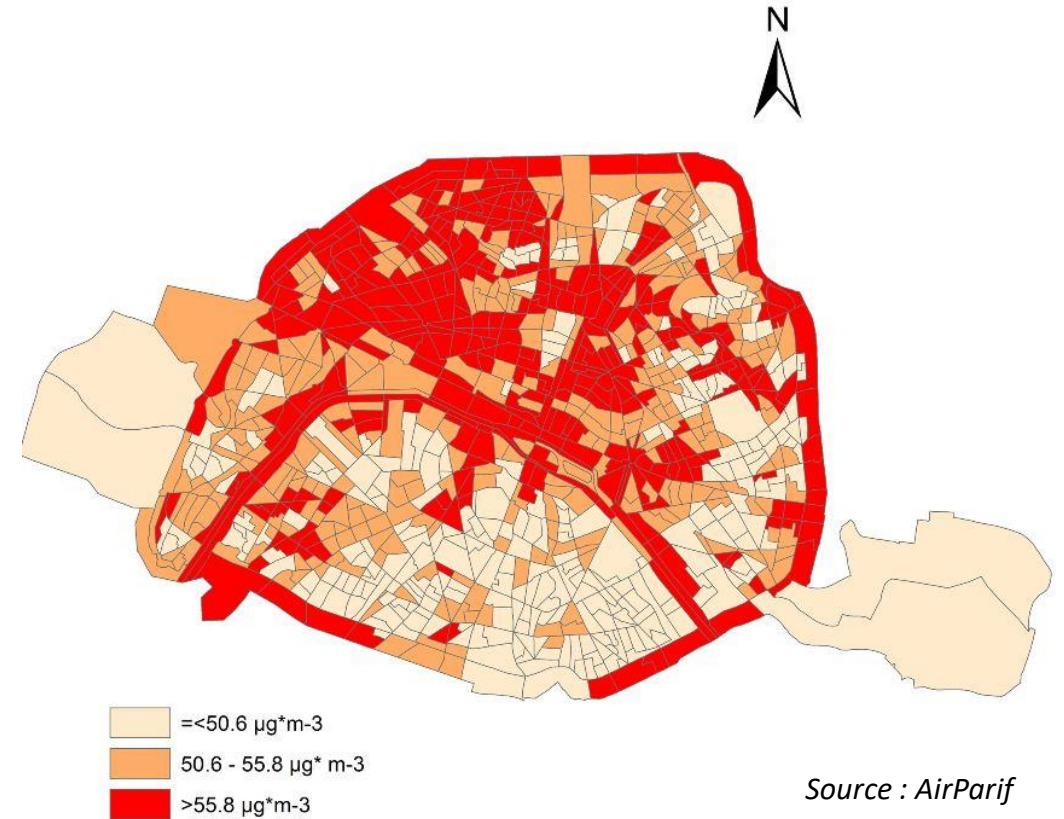
Collect

Rinse

Sell



Source : AirParif, 2019



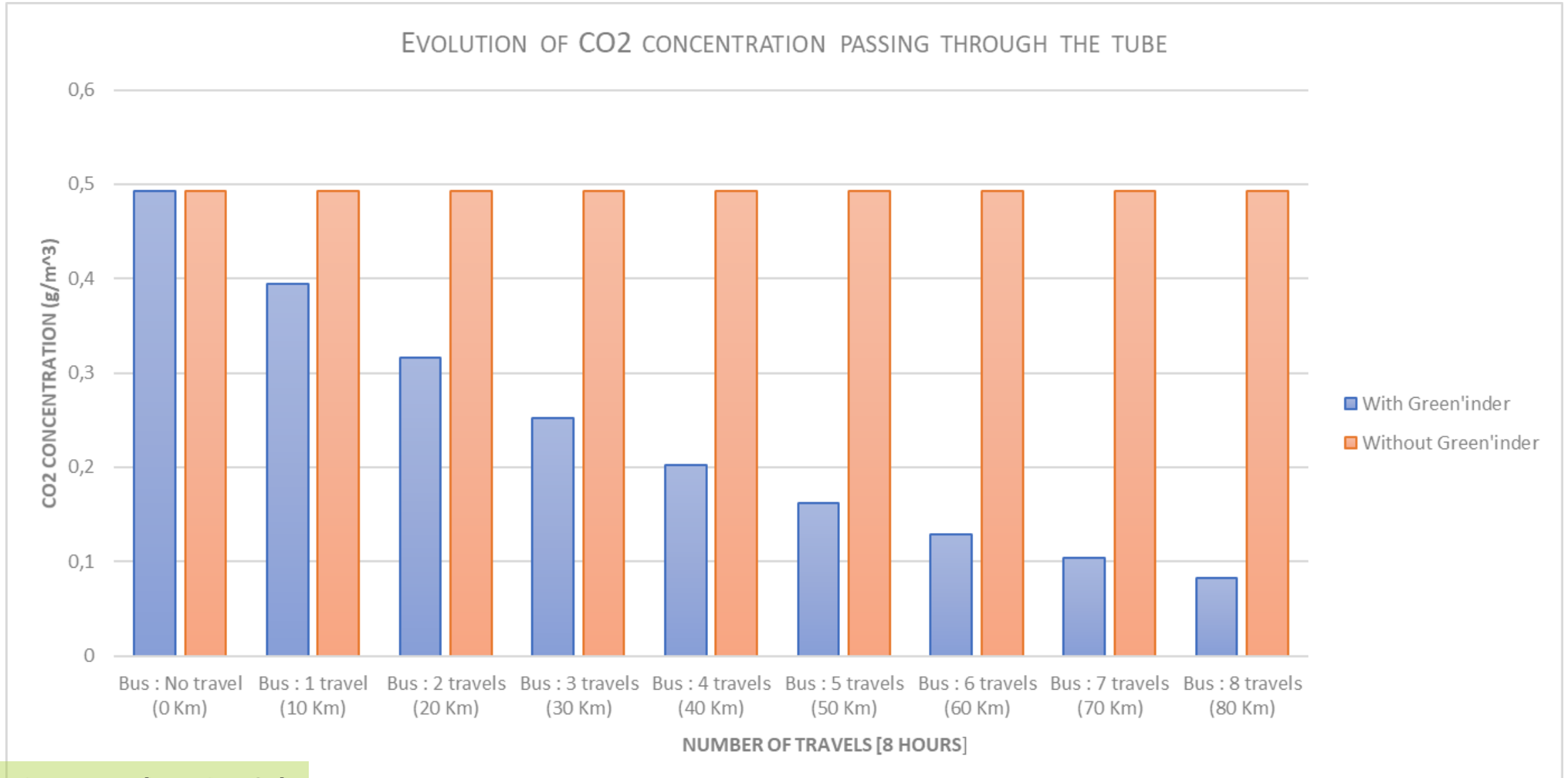
Particle concentration

(CO2, NOx, ...)

Example of a bus track (Bus 32 : Gare de l'est → Porte d'Auteuil) :



- Total distance (round-trip) : 20 Km
- High concentration of cars



ESTIMATED EFFICIENCY :

Emits



1200 g per 10 km

Collect

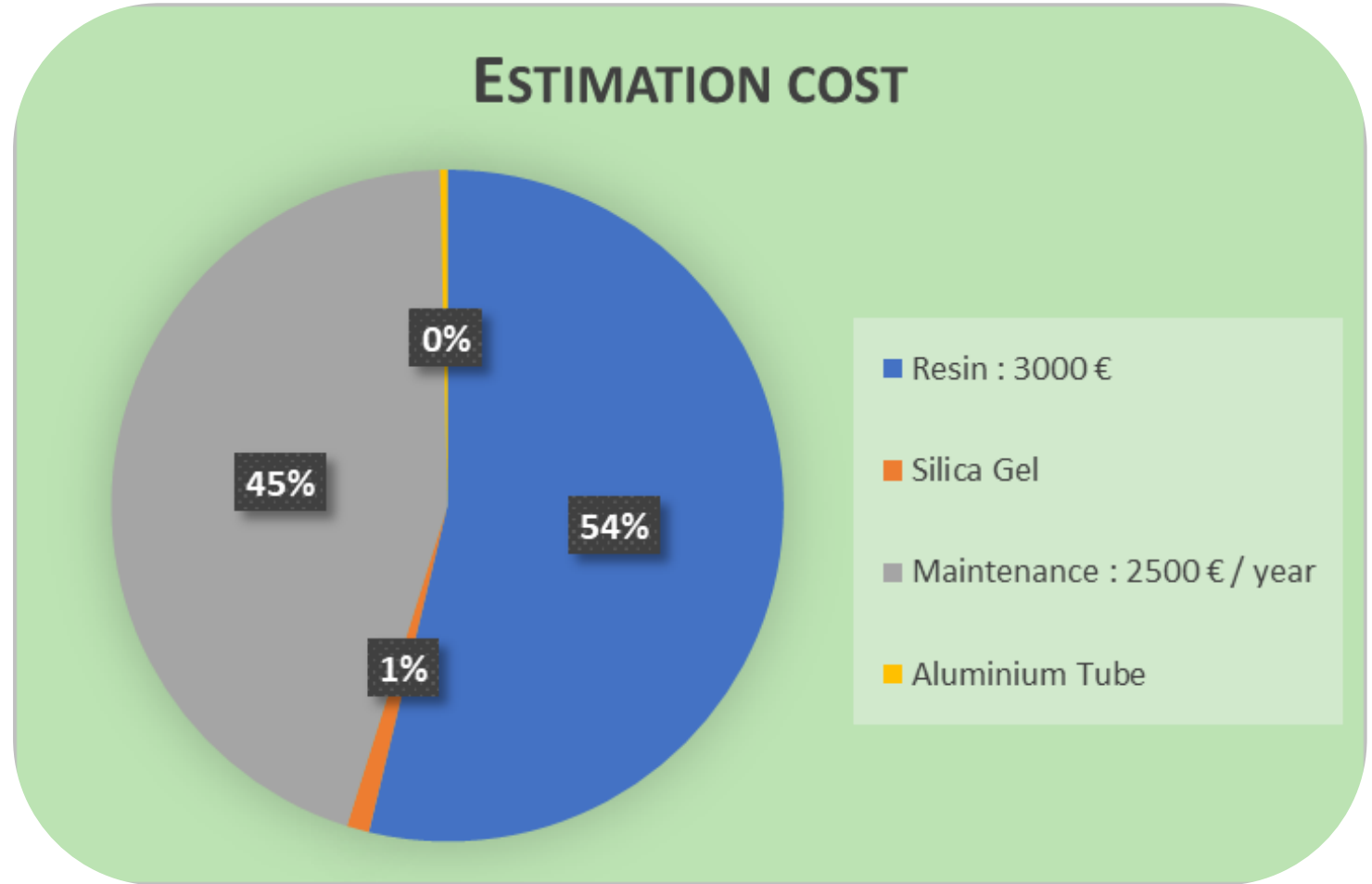


9600 g per day

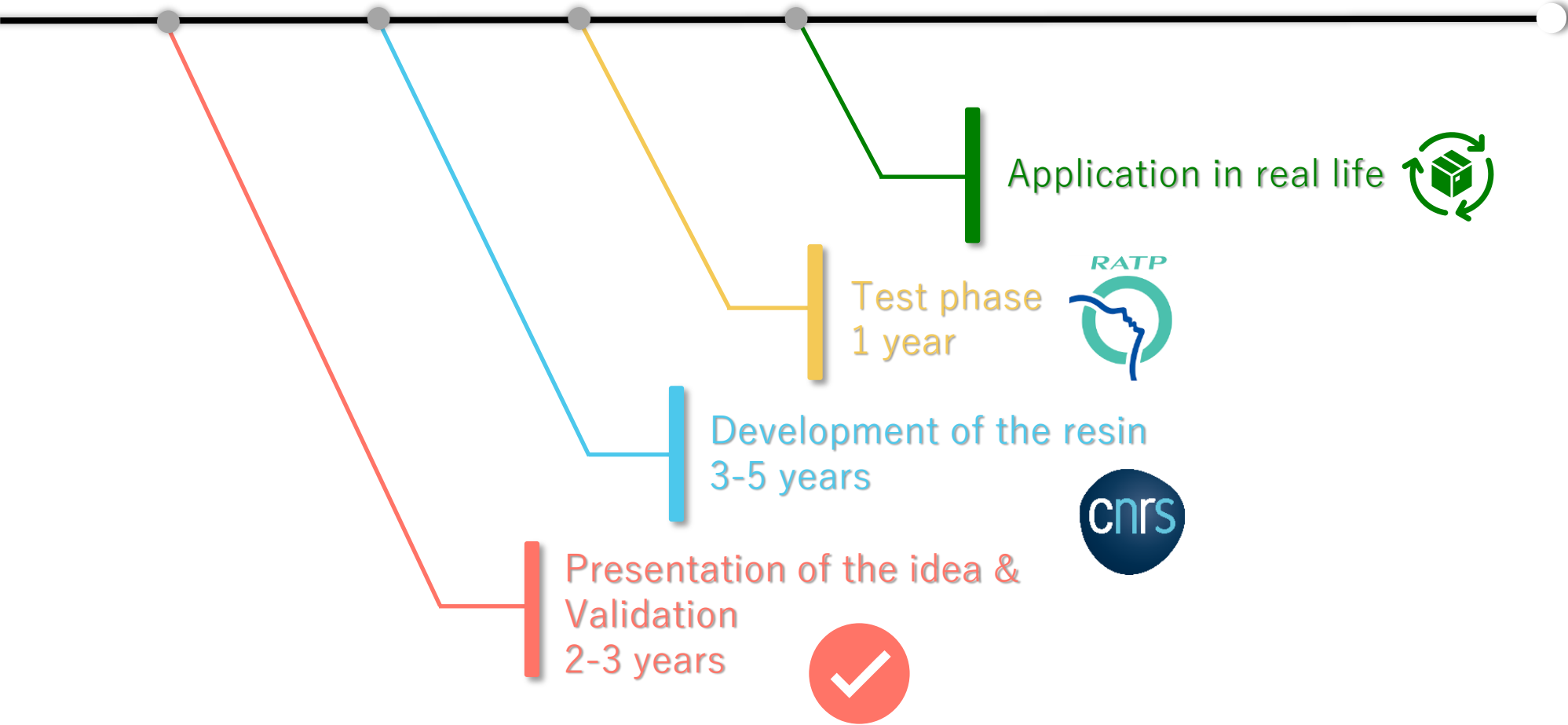
Sell : Bio-fuel, carbonated drinks, agricultures, ...



A bus : 3.5
Tons of CO2
per year



Conclusion



Thank You All



Green'inder

Collect, rinse, drive : a safe way to capture CO2

