COLLOQUE EUROPÉEN
DÉCARBONATION DES MOBILITÉS

l'avenir DU **FINANCEMENT**
des infrastructures de transport

22 fév. 2022 - Maison de la Chimie - Paris

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1 Why Eco'Road ?

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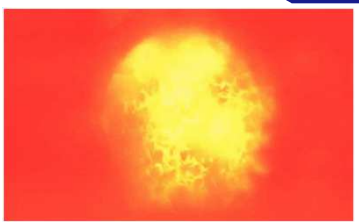
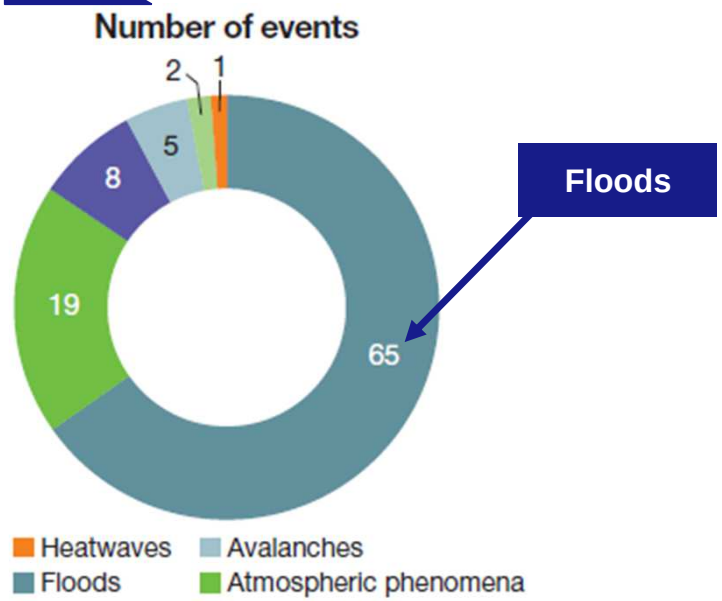
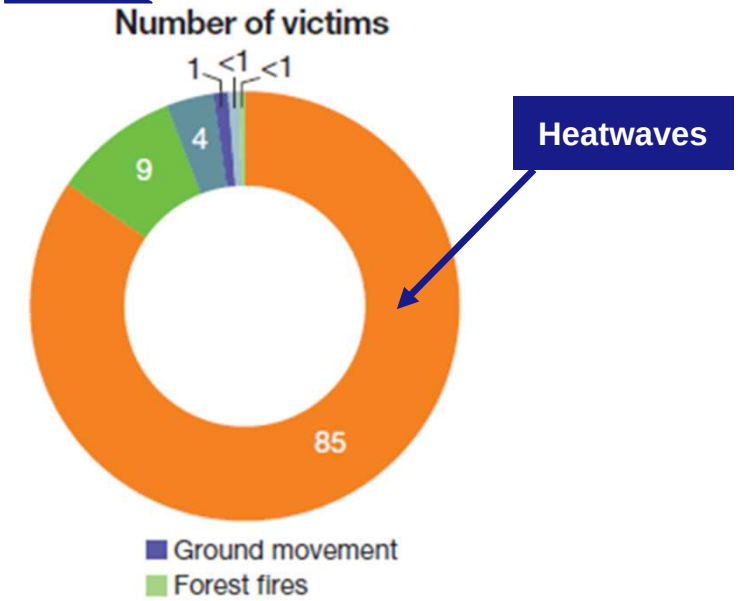
1 The situation in France





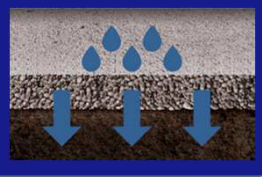


Source : Ministry for ecological and inclusive transition (MTES)

2 Our system

1 - Surface course

➔ Porous pavement

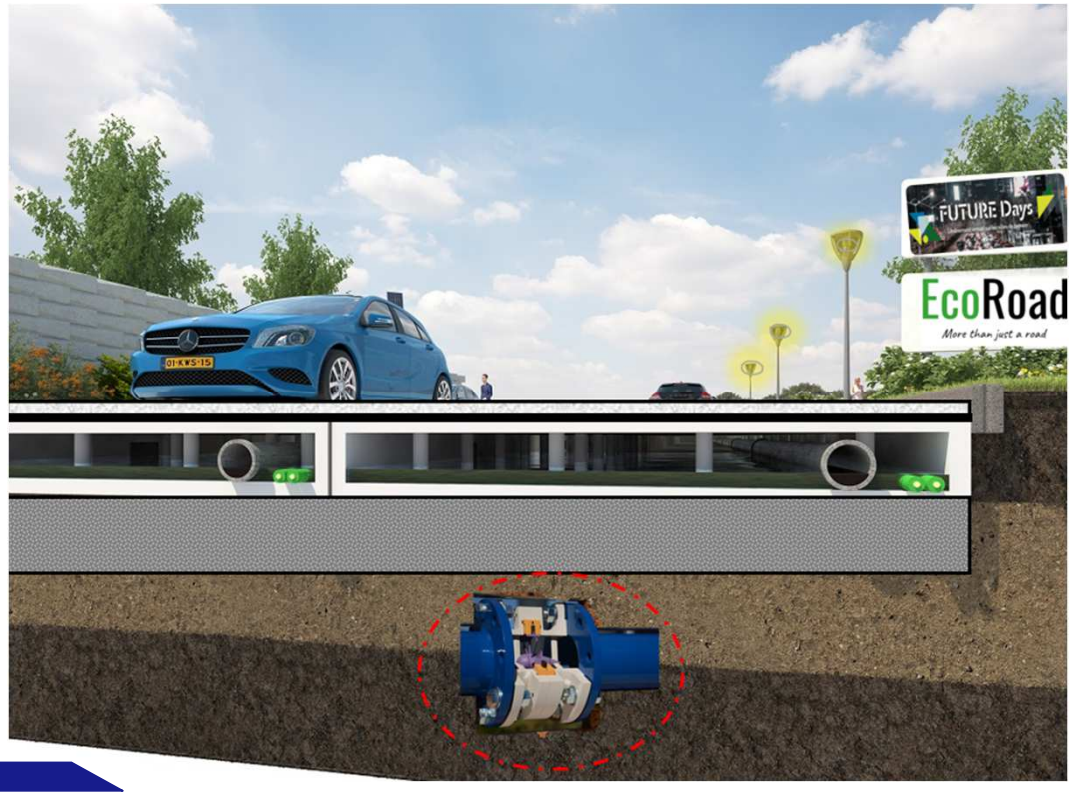


2 - Base course

➔ Plastic road

3 - Energy production

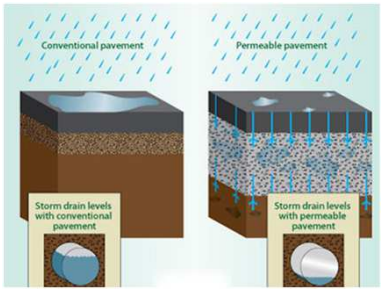
➔ Pico turbine

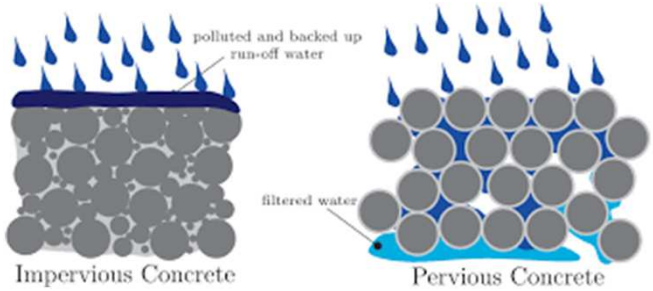


3 Surface course porous pavement

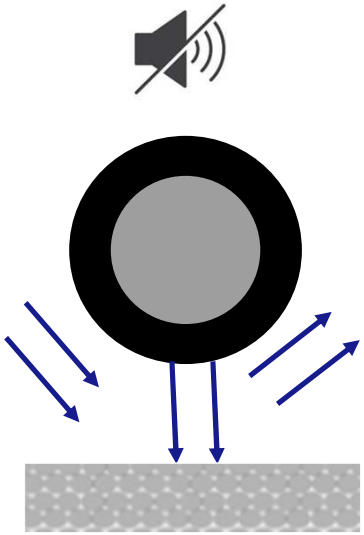
Technical specification

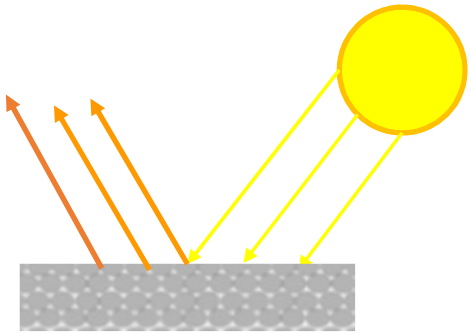
- ➔ 30% of voids
- ➔ Strength of the concrete
- ➔ Additional material: superplasticizer, steel fibre
- ➔ Strong capacity to absorb water





3 Advantages





- Environmental benefits eco friendly

- Sound Absorption

- Light reflectivity

3 Plastic road

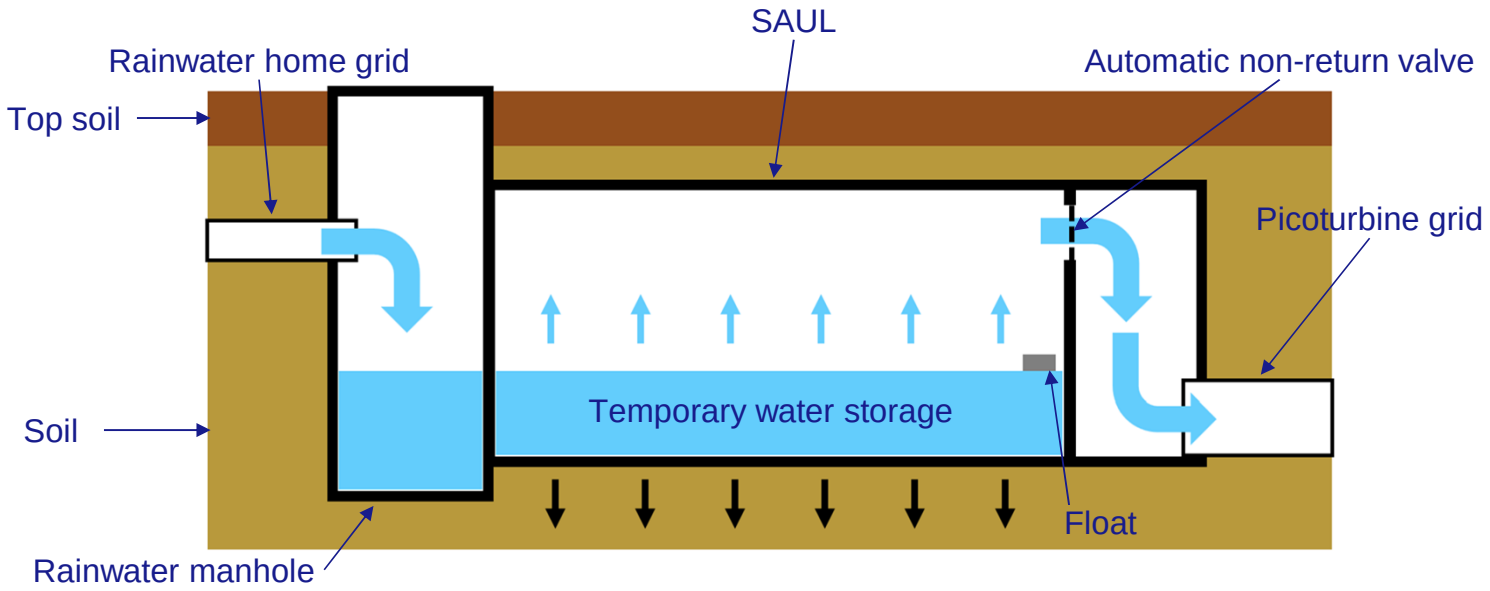
Plastic road in figures:

- ➔ 300L water berging (per m²)
- ➔ 72% maximale C02 reduction
- ➔ 43 kg weight

Source: EarthDECKS plastic road

4 Water storage

S.A.U.L. : Structure Alvéolaire Ultra Légère
= Ultra Lightweight Honeycomb Structure



Made of high density polymers (Polypropylene or Polyethylene or Polyvinyl Chloride)

Vacuum rate greater than 90%

Possibility of variable hydraulic conductivity

4 Energy conversion

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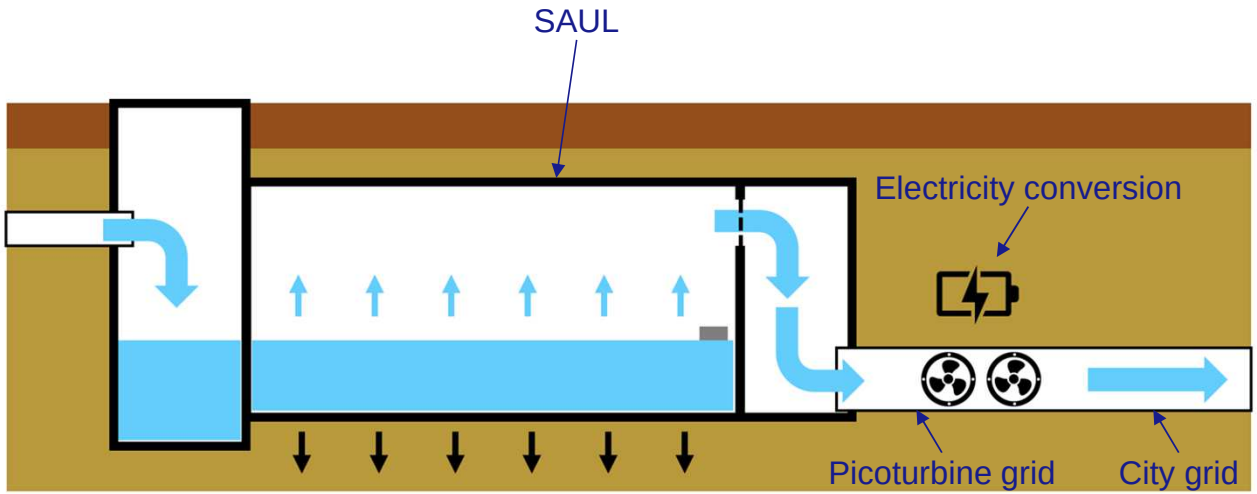
= Ultra Lightweight Honeycomb Structure

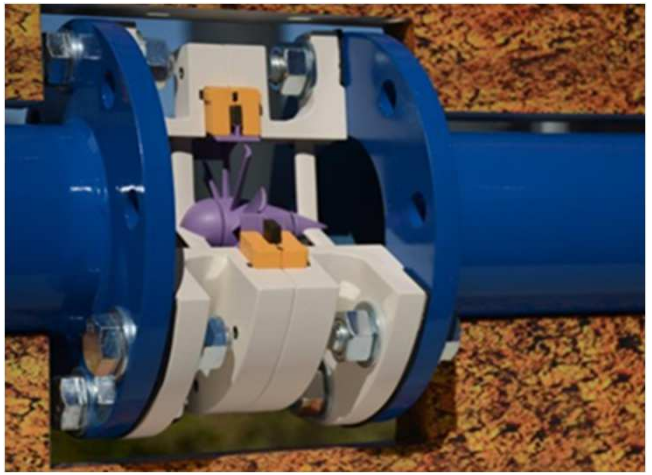


2 pipes (Outlet)
2 picoturbine potential = 2 x 300 W

4 Picoturbine

Picoturbine PICOGEN electrical potential averaging 2 x 200W

Most effective turbine for implementation in road structures



Source : www.save-innovations.com/picogeneratrice/

4 Energy production for a year

Cities	Total rainy days	Electrical production per SAUL
Pau	123 days	1180,8 kWh
Brest	120 days	1152 kWh
Besançon	115 days	1104 kWh
Paris	99 days	950,4 kWh

source : climate-data.org

Case study in Paris

- ➔ Bicycle path today : +1000 km
- ➔ Bicycle path goal in 2026 : 1520 km
- ➔ Bicycle path to come : +520 km

Hypothesis :

- ➔ 1 SAUL per 200 m
- ➔ With + 520km Paris could produce **2,47 GWh** from rains

4 Avantages and improvements

Turbine's efficiency over 80%

Durable energy : turbine's lifetime is about 40-50 years

Reducing carbon footprint

Potential little wastes on turbine's pipes

Maintain the draining coating of surface

5 Finally

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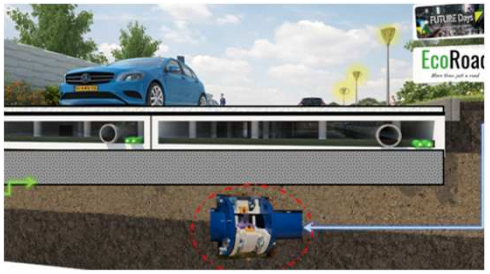
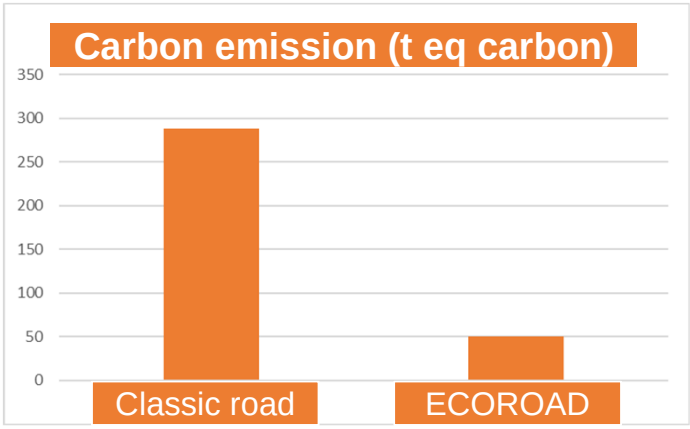
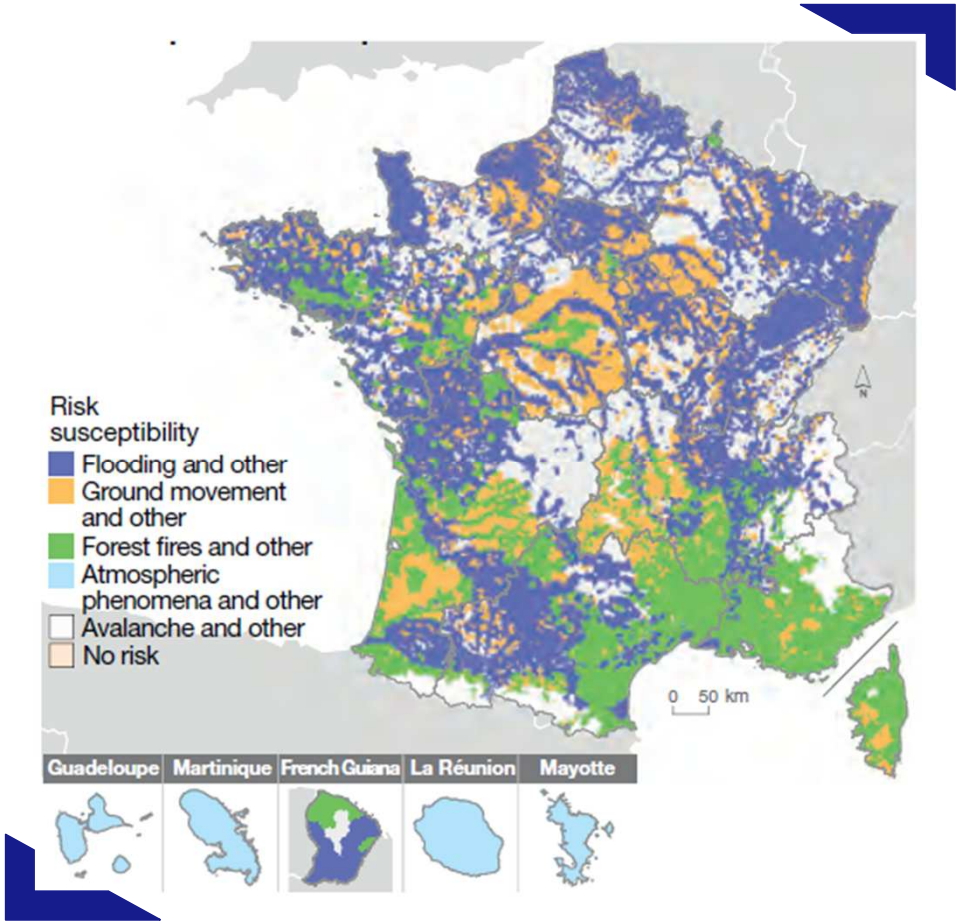




Benefits:

- ➔ 0 Raw material extraction
- ➔ Low carbon emission
- ➔ Cheaper than a classic road
- ➔ Good resistance

6 Potential in france and abroad



Source : MTES Gaspar database 2019

Thank you for listening

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