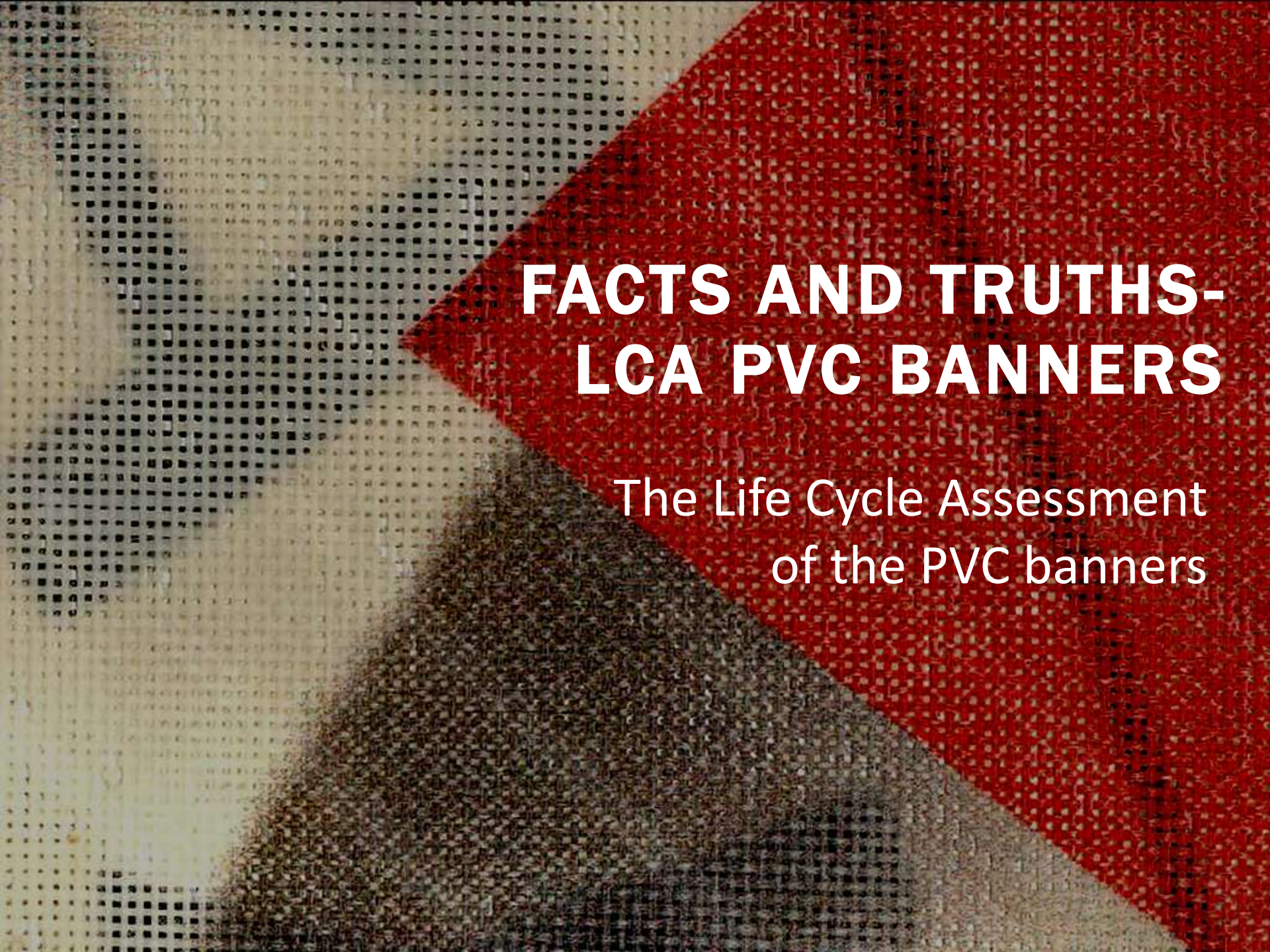
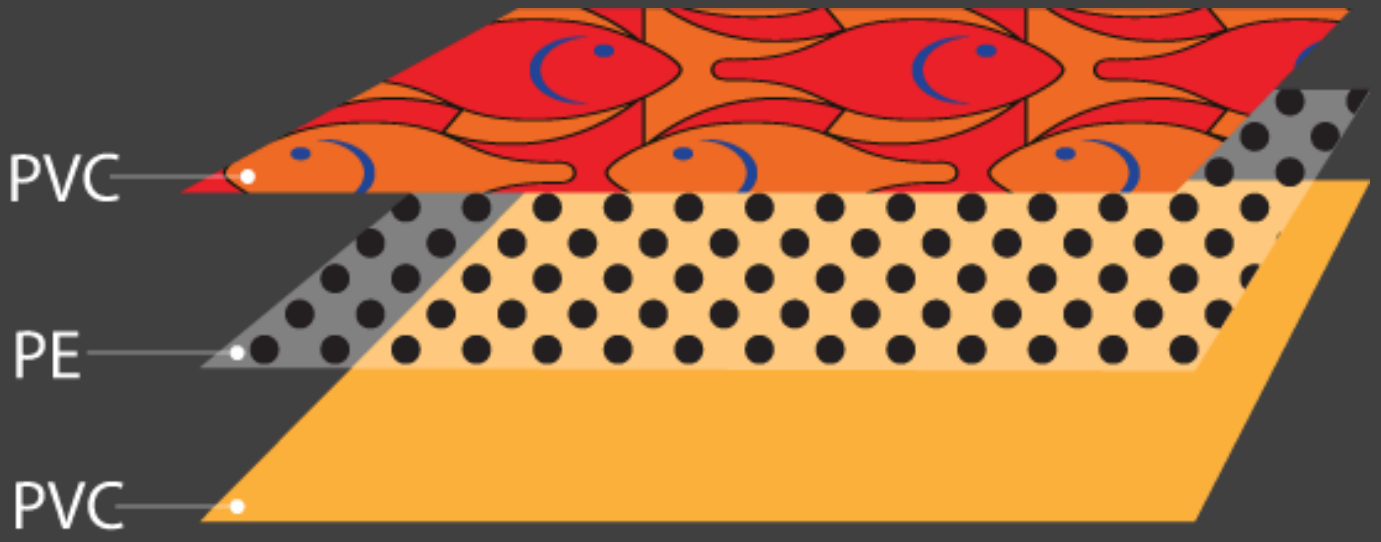

FACTS AND TRUTHS-
LCA PVC BANNERS
The Life Cycle Assessment
of the PVC banners

# OVERVIEW

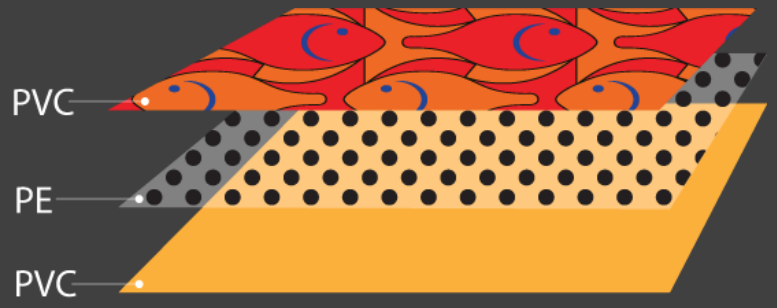
1. PVC banners
2. Life Cycle Assessment
3. Processing to recycle pvc banners
4. Recycling and Medence Csoport
5. Carbon footprint of recycled bag
6. Extension of life time
7. Conclusion

# WHAT IS A PVC BANNER?

PVC BANNER=
looped polyester textile with PVC coating on both sides



# MANUFACTURING PROCESS




## Coated materials

are manufactured by dipping the textile in a liquid PVC which coats the PVC onto the textile on both sides

*OR*

## Laminated materials

are manufactured taking a layer of fabric and taking two layers of PVC film. These films are welded together with heat and pressure

# WHY WE USE PVC FOR BANNERS? - CHARACTERISTICS

durability
easy to process
reasonably priced
highly UV resistant
printable
flame resistant

hardly recyclable
limited thermal capability
toxic chemicals - phthalates and dioxins

# LIFE CYCLE ASSESSMENT OF PVC BANNER


LCA =
is a standardised, credible, science-based method for measuring the full environmental impact of products and services

# INDICATORS

**energy**

--- consumption of energy

**water**

---consumption of water taken from the environment

**climate warming**

--- contribution of gas emission (mainly CO2)

And also

**human toxicity, common waste, hazardous waste, land use, fossil fuel**

# CRADLE-TO-CRADLE ASSESSMENT

**end-of-life disposal step = recycling process**

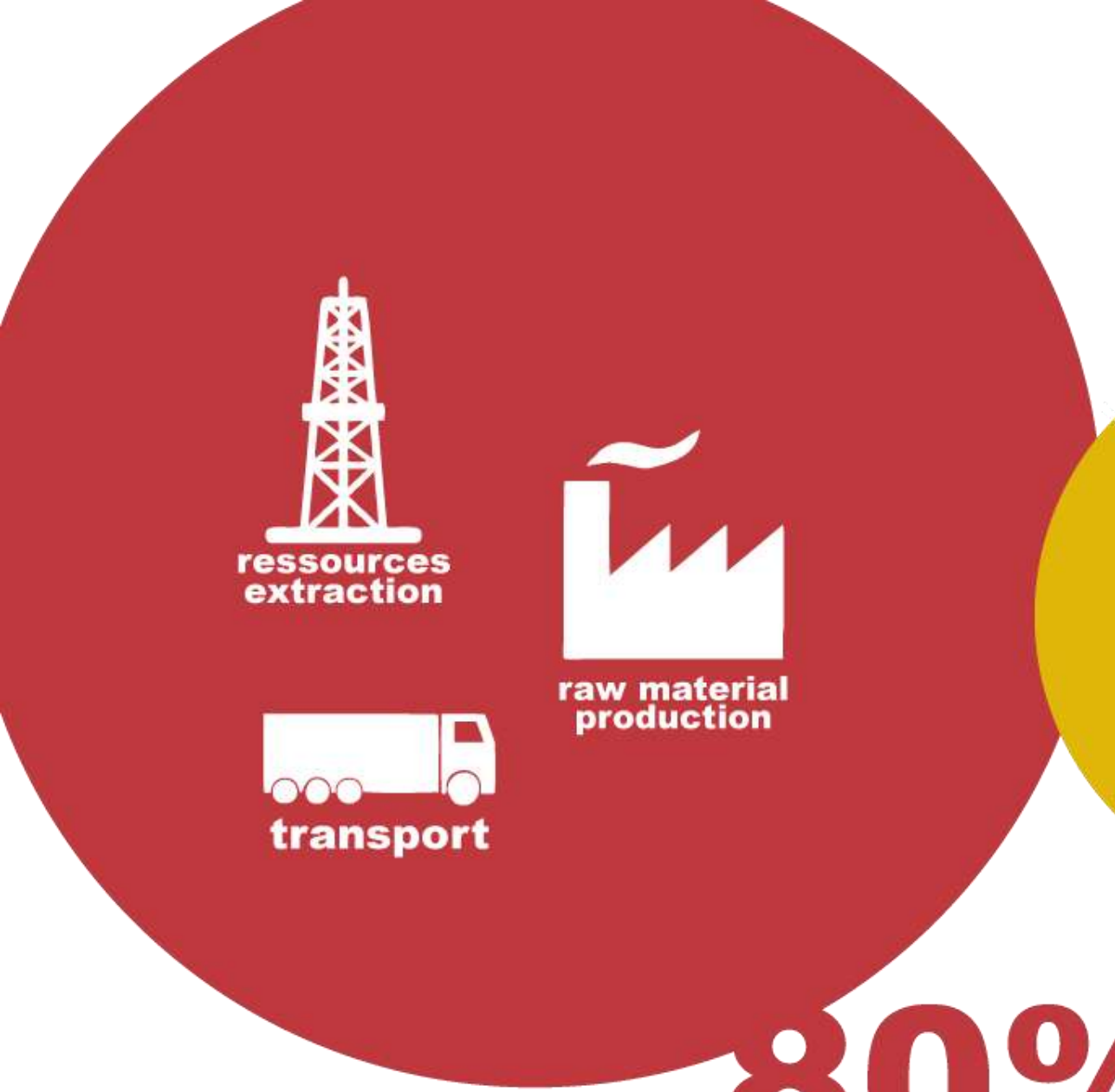

**identical products**

**new products**

# IDEAL CRADLE-TO-CRADLE PRODUCT

1. little/no **human health** risk
2. be recycled in a **closed loop design**
3. be created using solar or other **renewable energy**
4. have no impact on **local water sources**
5. be designed in a way that respects the **rights of the people** of our planet

# WHY RECYCLE?

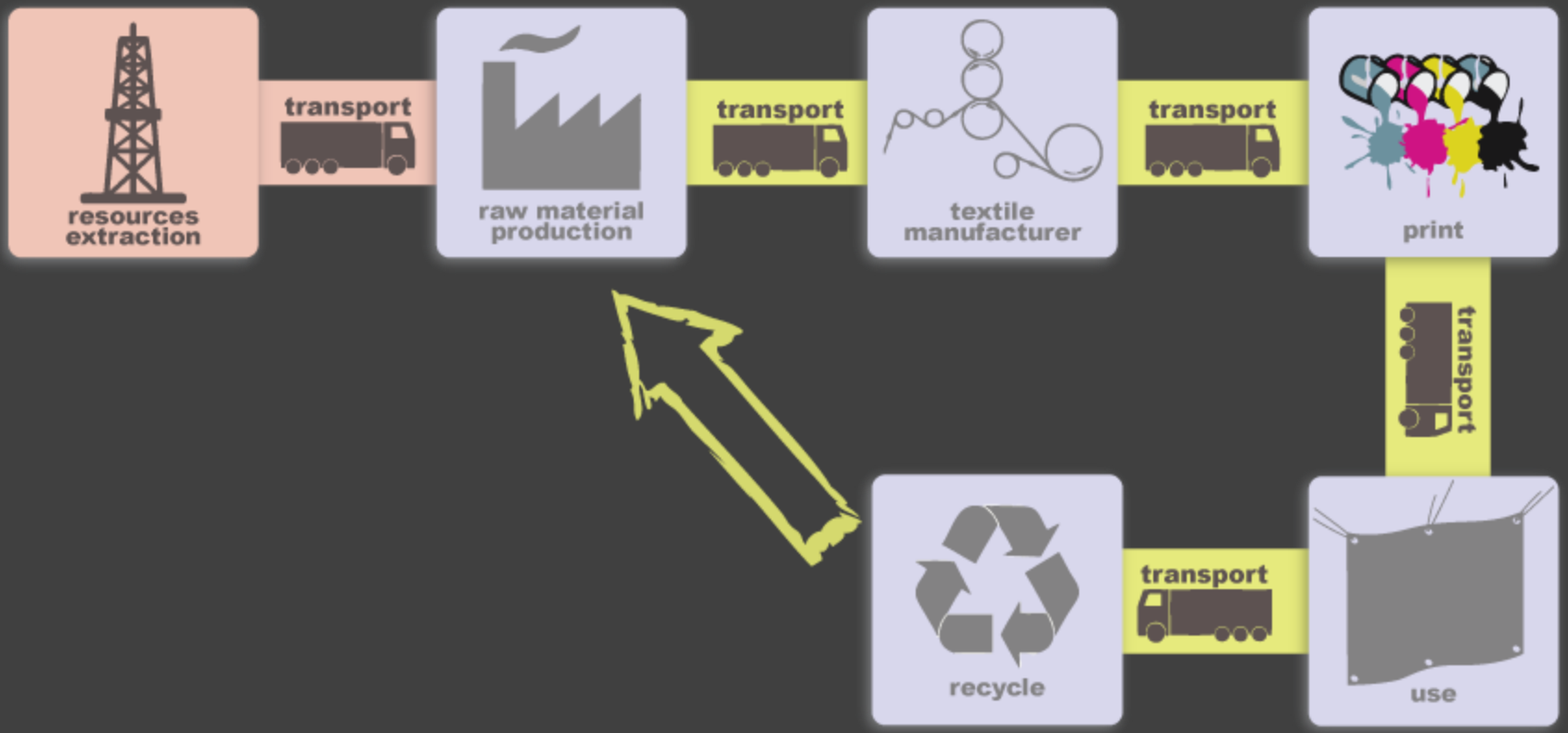




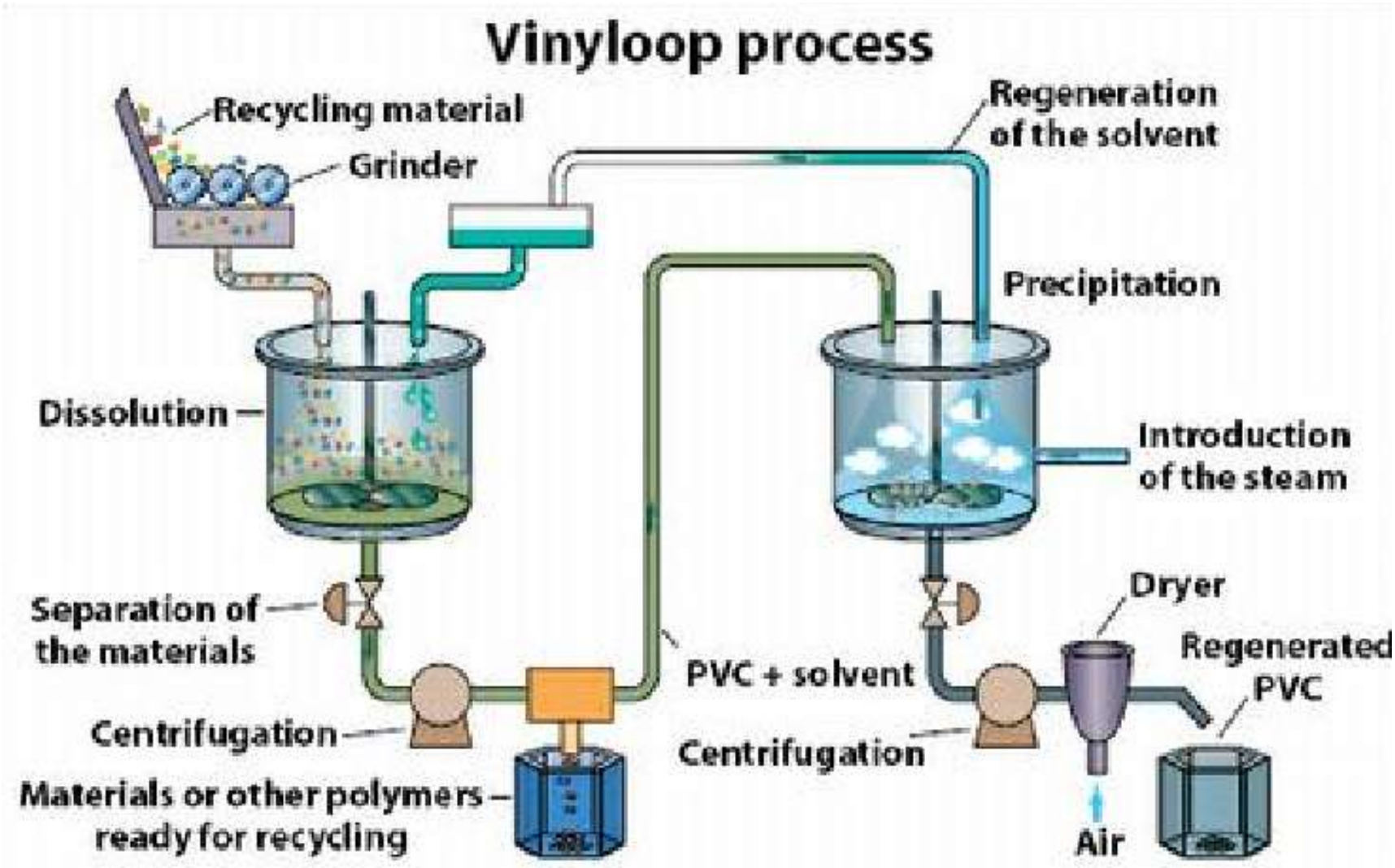
20%

80%

# PVC BANNER FROM PVC BANNER



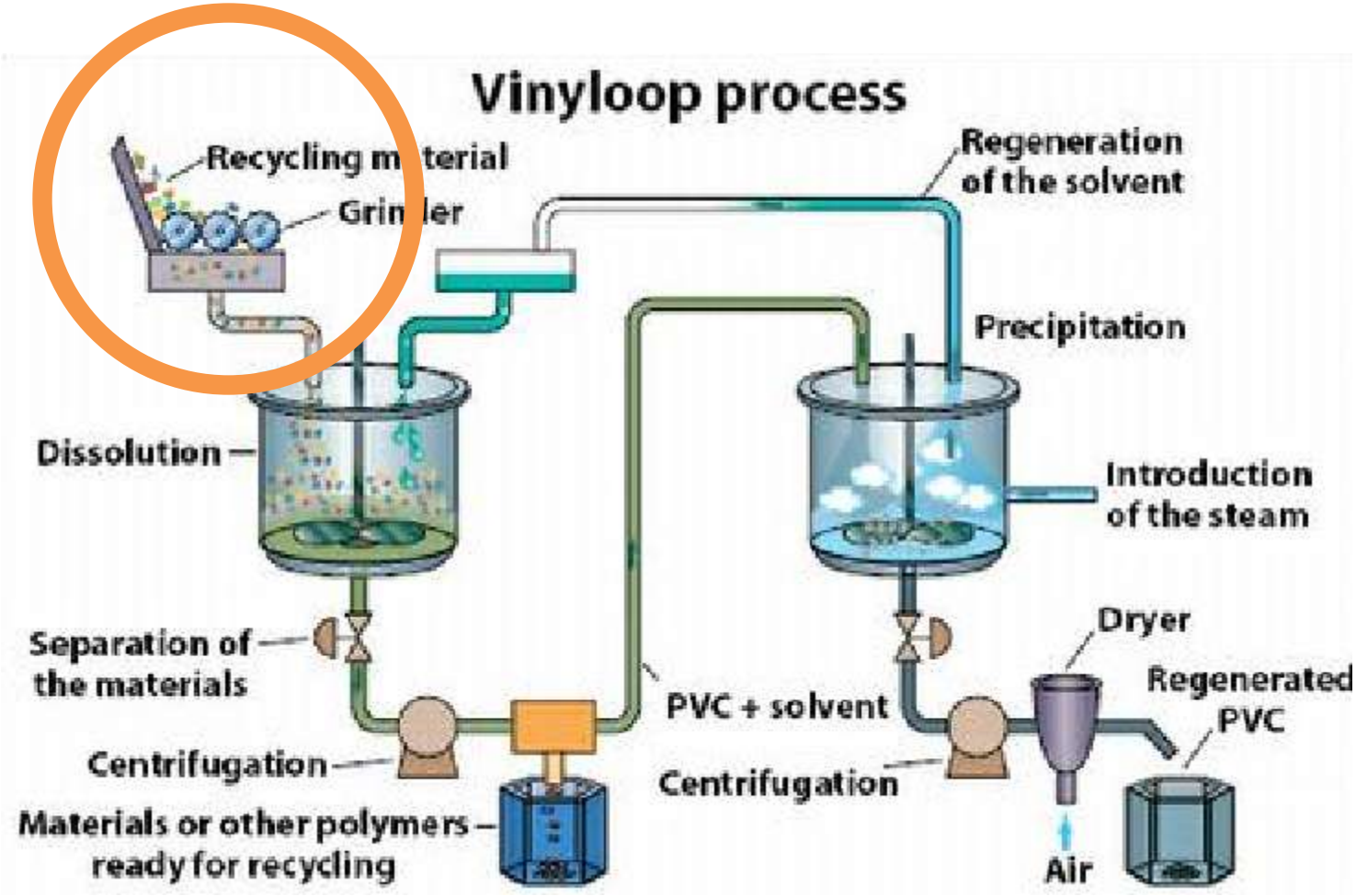
# HOW CAN WE RECYCLE PVC BANNER?




source : http://machinedesign.com/article/new-life-for-shredded-plastic-waste-0207

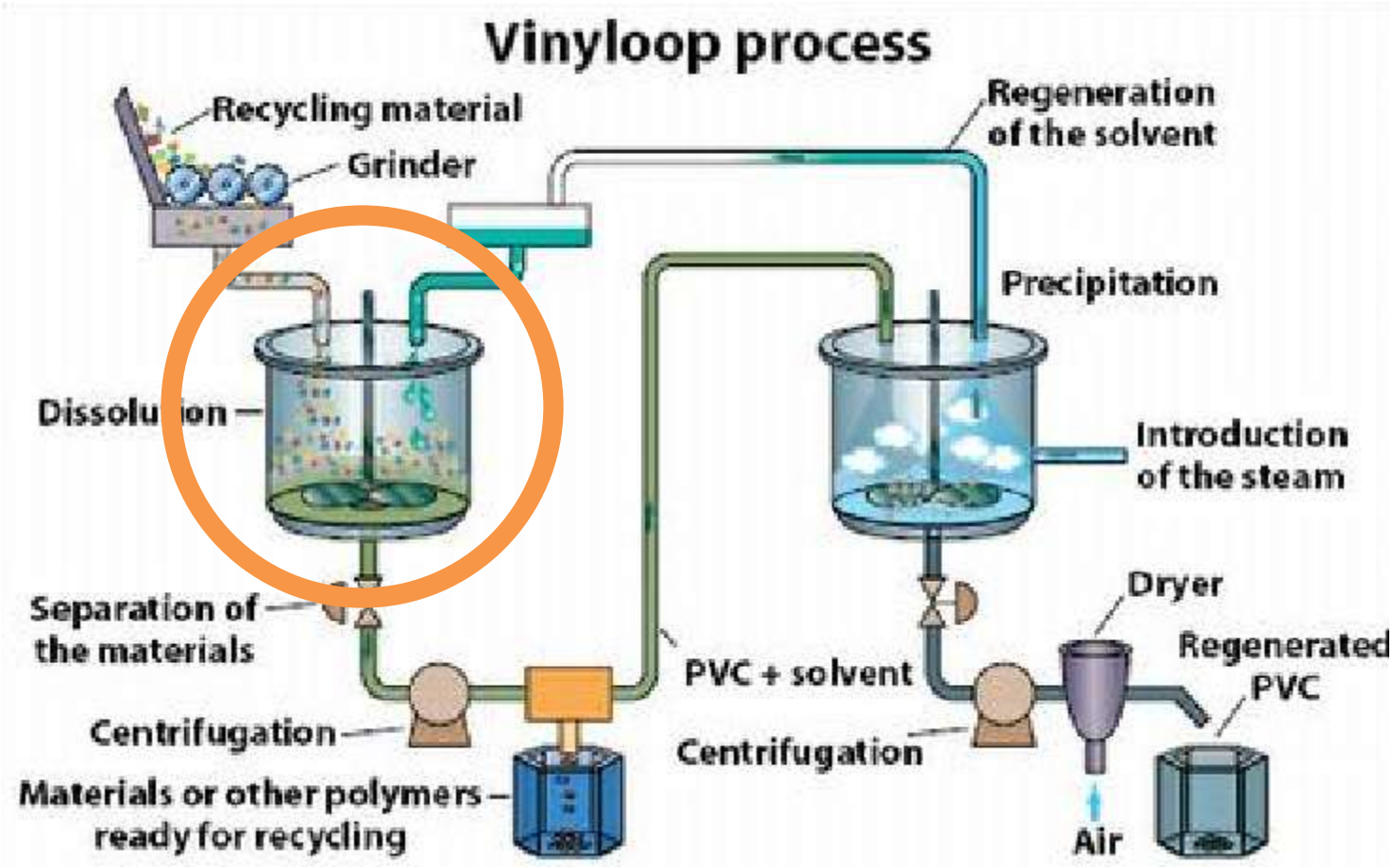
# HOW CAN WE RECYCLE PVC BANNER?

## 1. Breaking the PVC chain + Physical processes



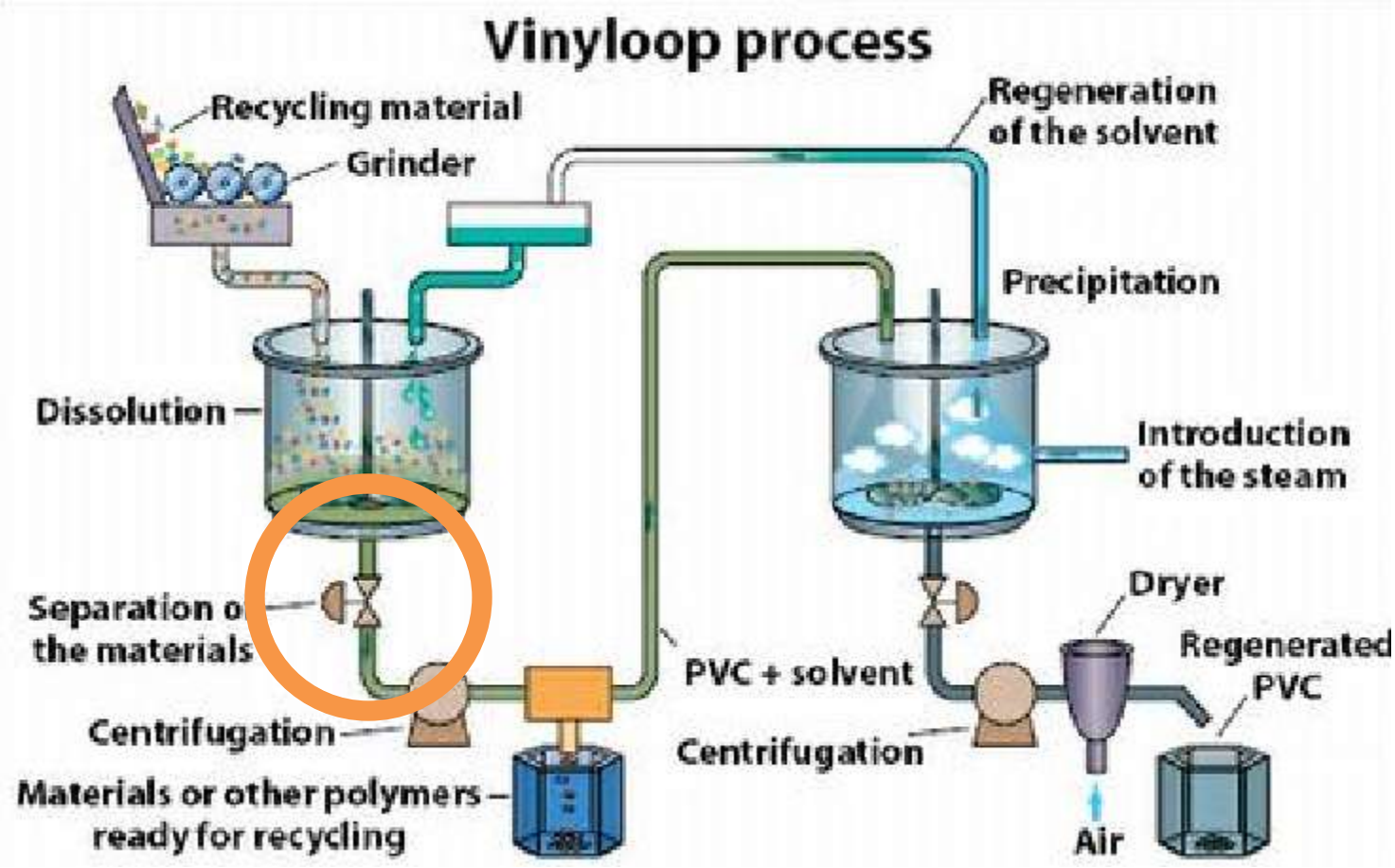
# HOW CAN WE RECYCLE PVC BANNER?

## 2. Dissolution



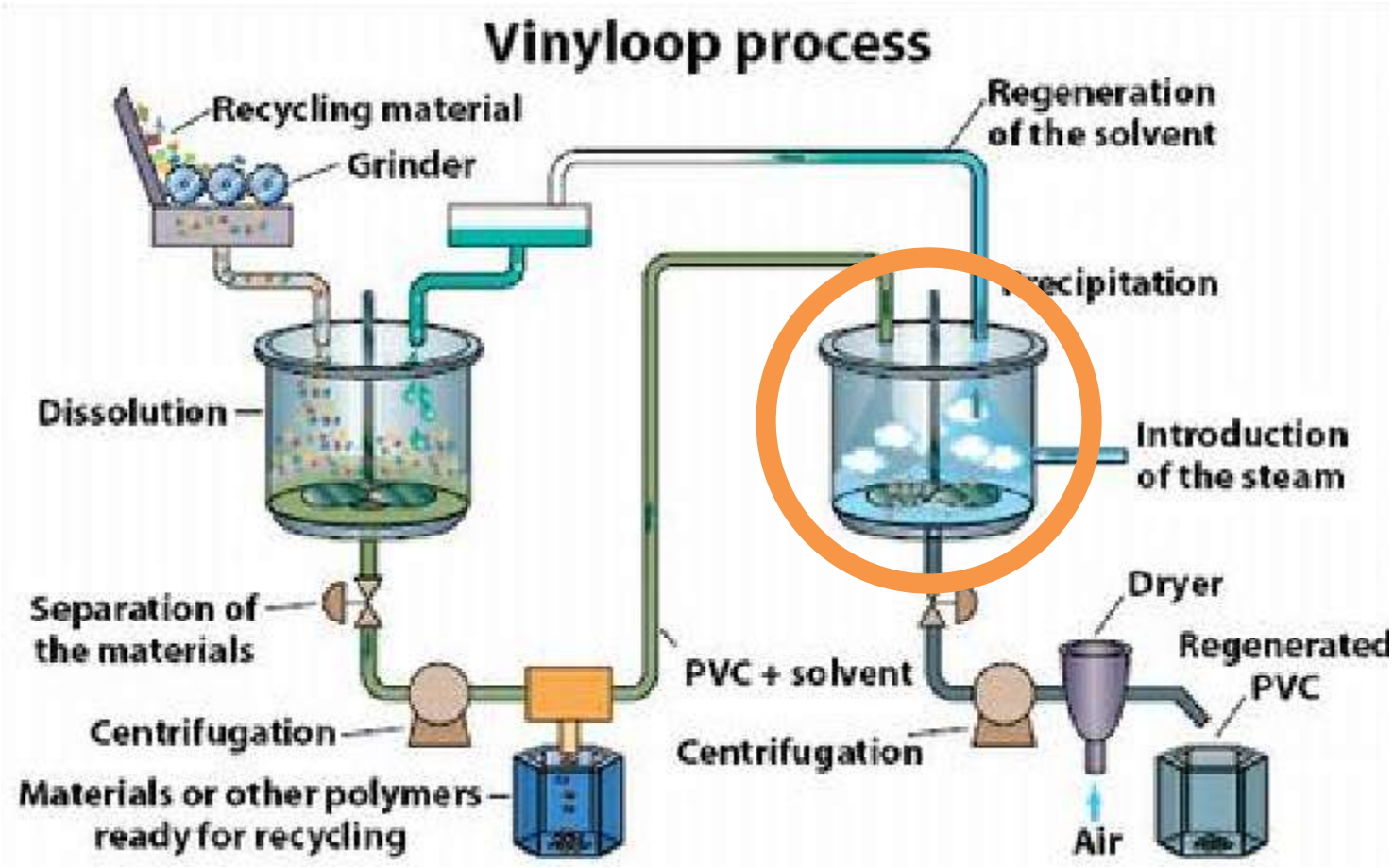
# HOW CAN WE RECYCLE PVC BANNER?

## 3. Separation



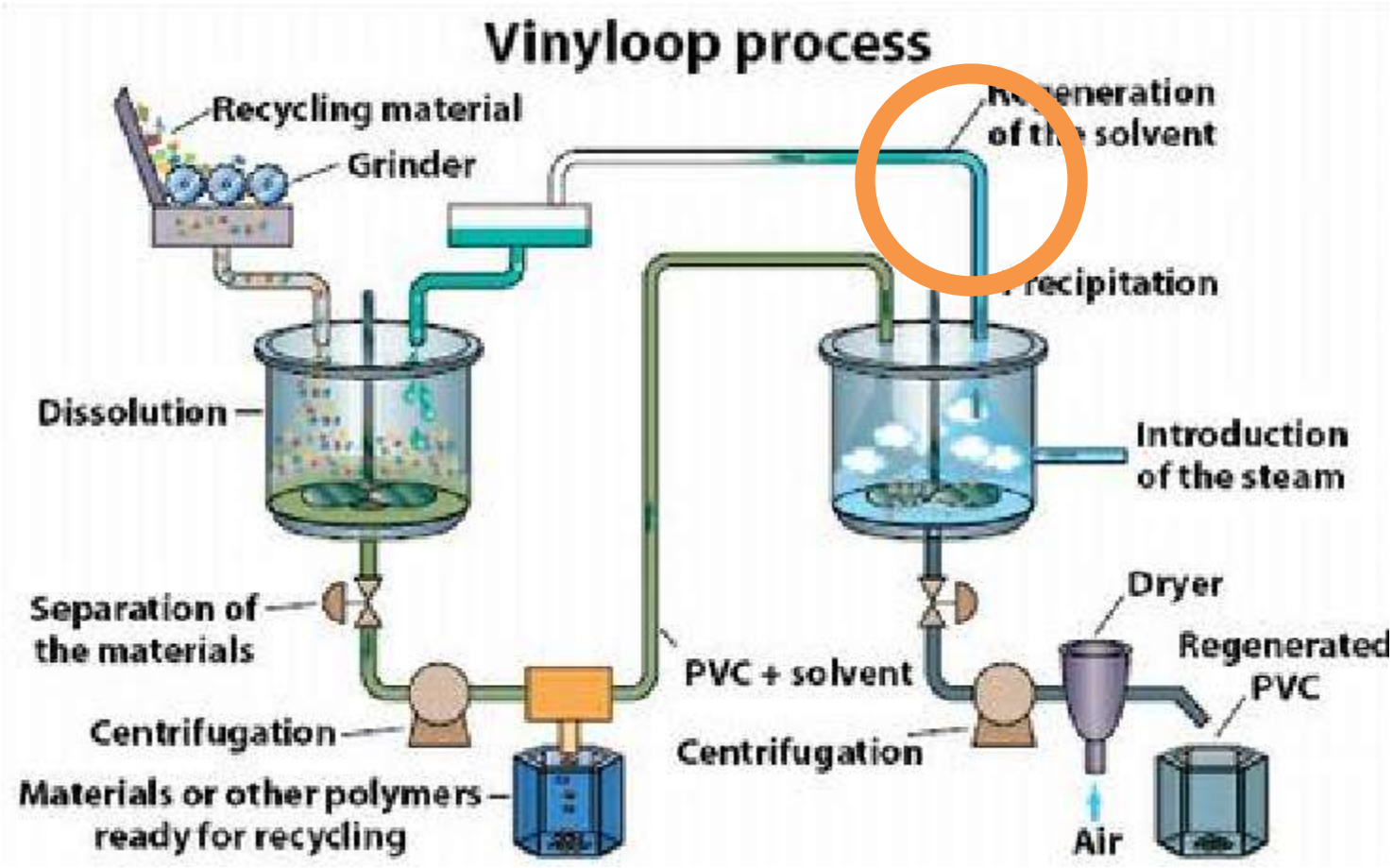
# HOW CAN WE RECYCLE PVC BANNER?

## 4. Precipitation

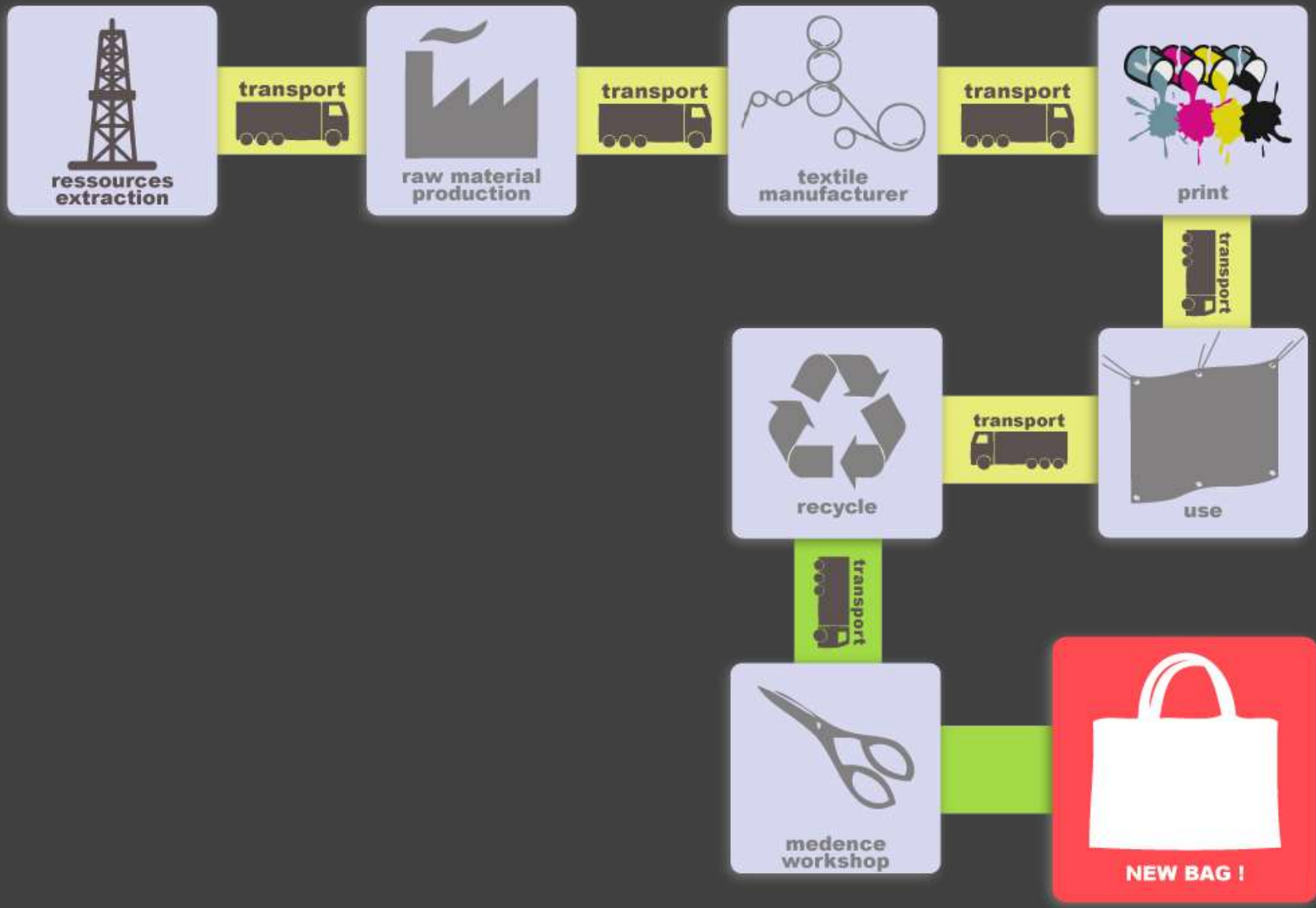


# HOW CAN WE RECYCLE PVC BANNER?

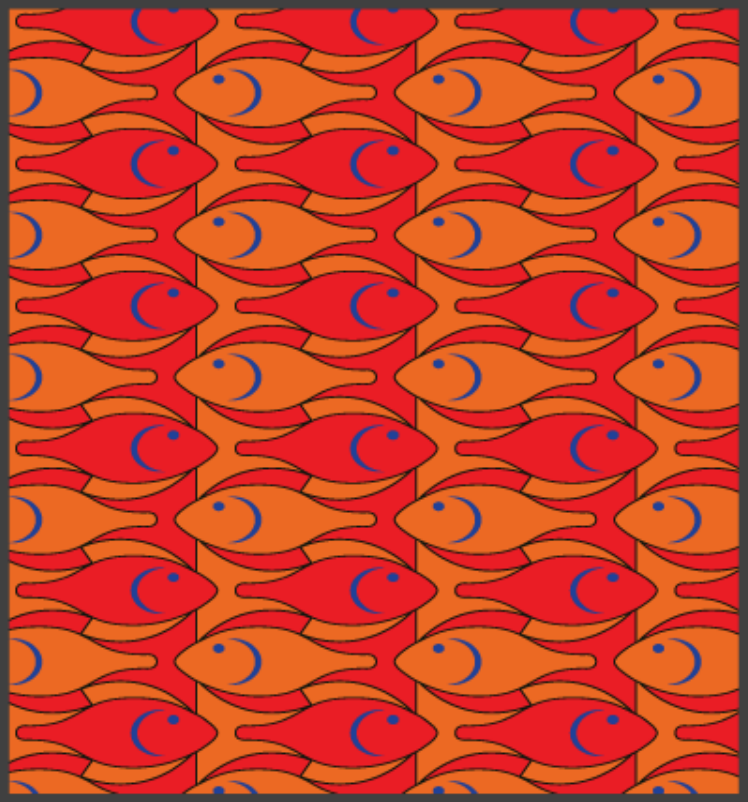
## 5. Solvents



# NEW BAG FROM PVC BANNER



# WHAT IS THE CARBON FOOTPRINT OF 1 RECYCLED BAG?



100 $m^2$ of PVC banner

~ 100 new bags

# WHAT IS THE CARBON FOOTPRINT OF 1 RECYCLED BAG?

100 $m^2$ of PVC banner ≈ 150 kg of $CO_2$

source :
LCA of Batyline® Textile by Ferrari
and LCA of EVERGreen Textile

+ 10% of environemental impact
due to transport, cleaning, etc

1 bag ≈ 1.6 kg of $CO_2$

# HOW MUCH IS 1.6 kg of CO2?

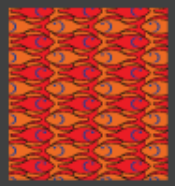
## 1.6 kg of CO2 ≈ 10 km by car

to compare...

# THE PRODUCT LIFETIME

Σ 150
kg of co2

3 months



150
kg of co2

+10%

Σ 165
kg of co2

28 months

# THE PRODUCT LIFETIME

Σ 150
kg of co2

3 months

1 hour of PVC banner use = **70 g of CO2**

150
kg of co2

+10%

Σ 165
kg of co2

28 months

1 hour of PVC banner use = **8 g of CO2**

# HOW MUCH IS 8 g of CO2?

to compare...

x25

**1 hour of computer use =**

**200 g of CO2**

**1 hour of recycled bag use =**

**8 g of CO2**

# CONCLUSION

## CRITICISM

tiny projects can not change the world

good example of sustainability for big companies

Thank you for your attention