

# **Sustainable Innovation: Past , Present & Future**

## **SHIFT Final Conference**

**13<sup>th</sup> January 2016**

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Director

The Centre for Sustainable Design ®

University for the Creative Arts (UCA)







# UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT

Rio de Janeiro 3-14 June 1992



ANGOLA



# THE GLOBAL GOALS

For Sustainable Development





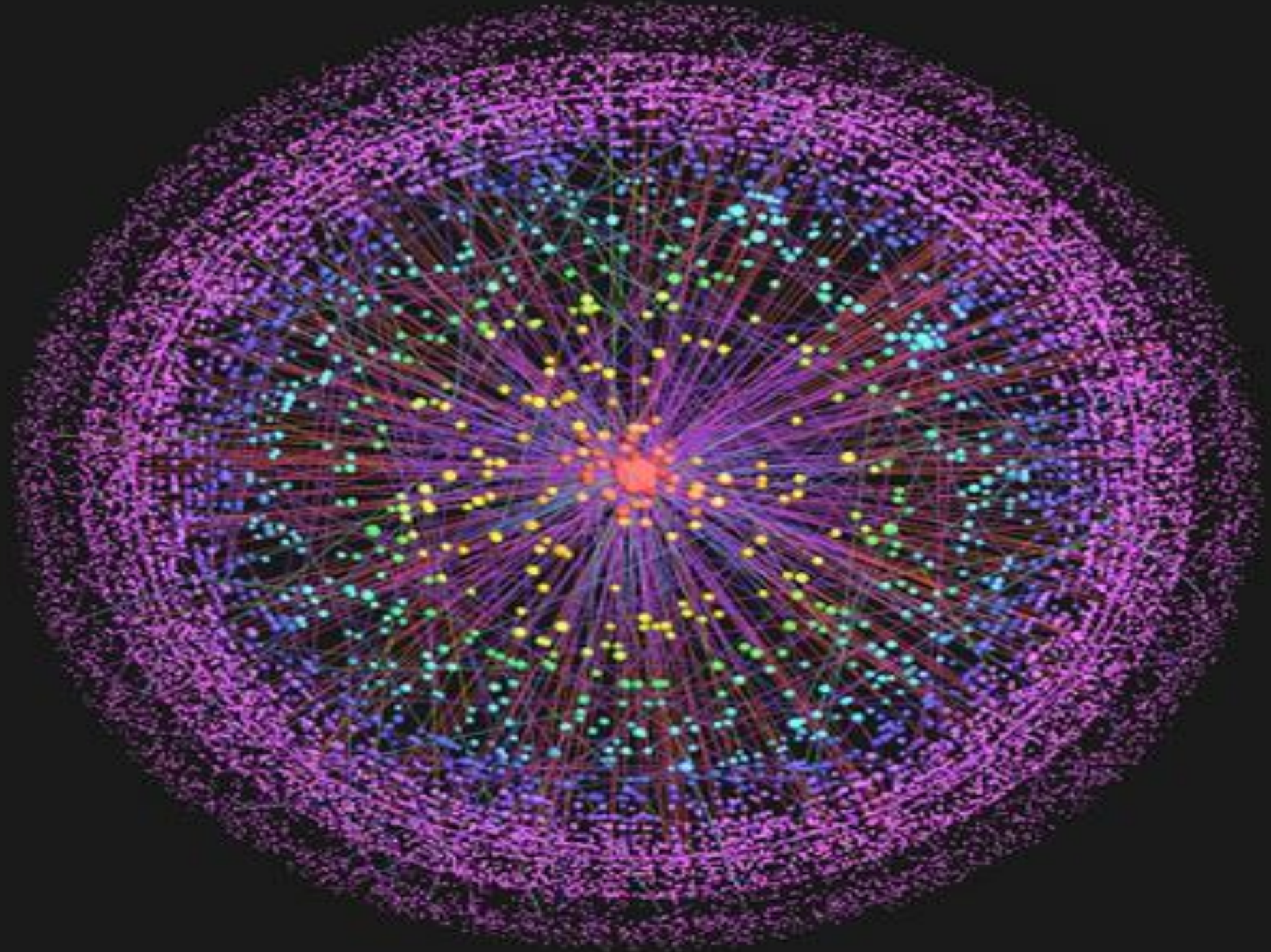
**PARADIGM**

**SHIFT**

















64 GB

11:45 AM

Camera Network Chat Internet

Store Friends Weather Downloads

News Notepad Video Calculator

Settings Security Blog Search

1

Phone Messages Music Home

11:45 AM

OVERVIEW EXPENSES

February 20

Total

Utilities

Food

Automotive

Insurance/Medical

Entertainment

Last updated: 11:35 AM

64 GB

11:45 AM

STOCK EXCHANGE

Last updated: 25 Feb 11:44:16

High	547.26
Low	481.09
Volume	3825604
Time	3:56 PM

ANNOUNCEMENTS

Focus on Saving Retiree Health Plans  
44 min ago

Jobs Preview: Hit or Miss  
1 hr 24 min ago

Charts News Alerts

64 GB

AM

Enter your address here

WS 264/37

Today 28 °F -2°C  
65% Fair

ENGINEERING • MEDICINE • INDUSTRY

ECOLOGY: TIME TO FALL BACK

UNEMPLOYMENT OVERCOMING FACTS









ipcc

INTERGOVERNMENTAL PANEL ON  
climate change







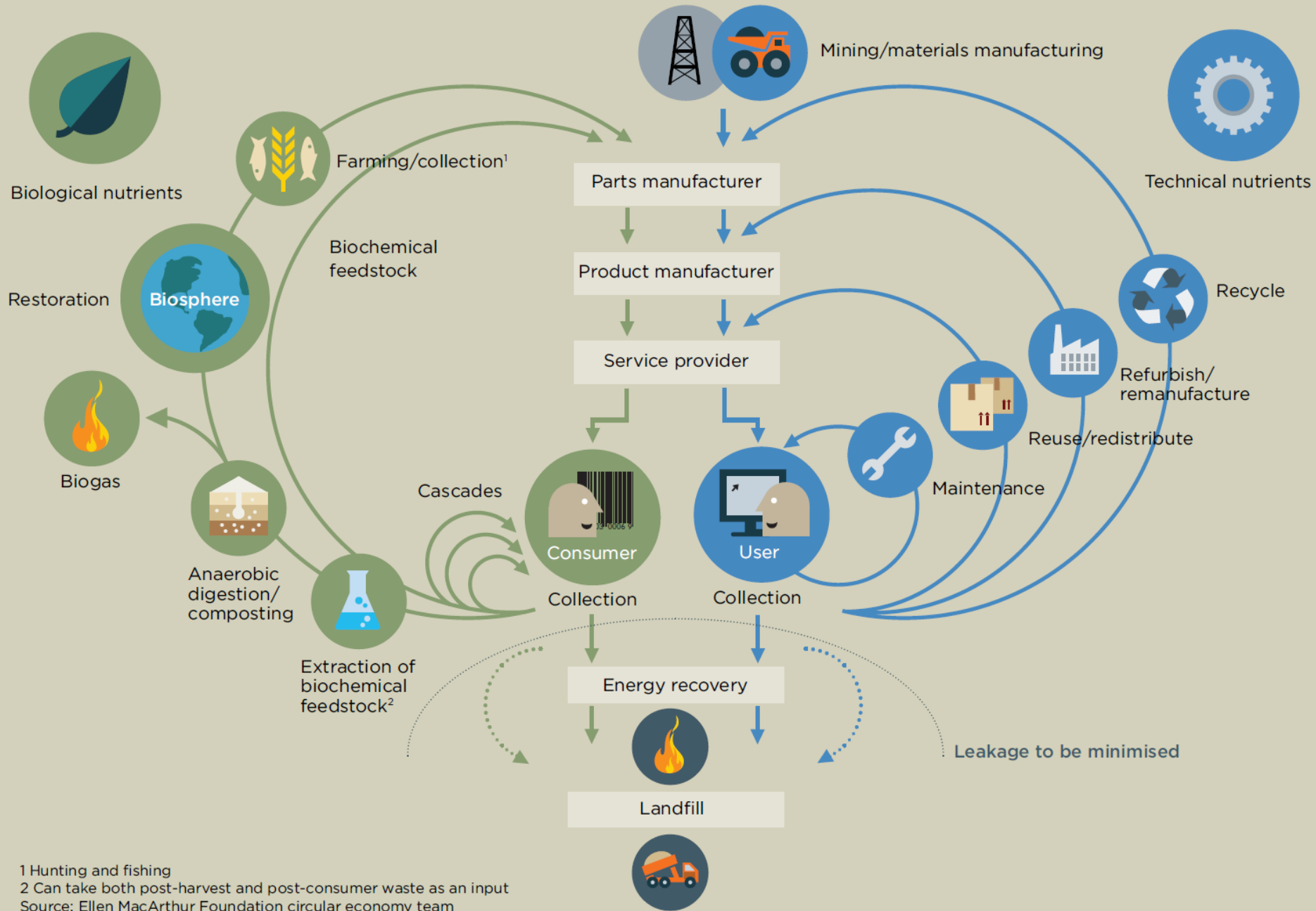








FIGURE 6 The circular economy—an industrial system that is restorative by design



<sup>1</sup> Hunting and fishing

<sup>2</sup> Can take both post-harvest and post-consumer waste as an input

Source: Ellen MacArthur Foundation circular economy team





European  
Commission



# IPPP



The Centre for Sustainable Design®



# SCP



The Centre for Sustainable Design®





**80%**



# 'Cradle to grave' product life thinking (traditional)



Extraction of raw materials



Manufacturing



Packaging and distribution



Use and maintenance

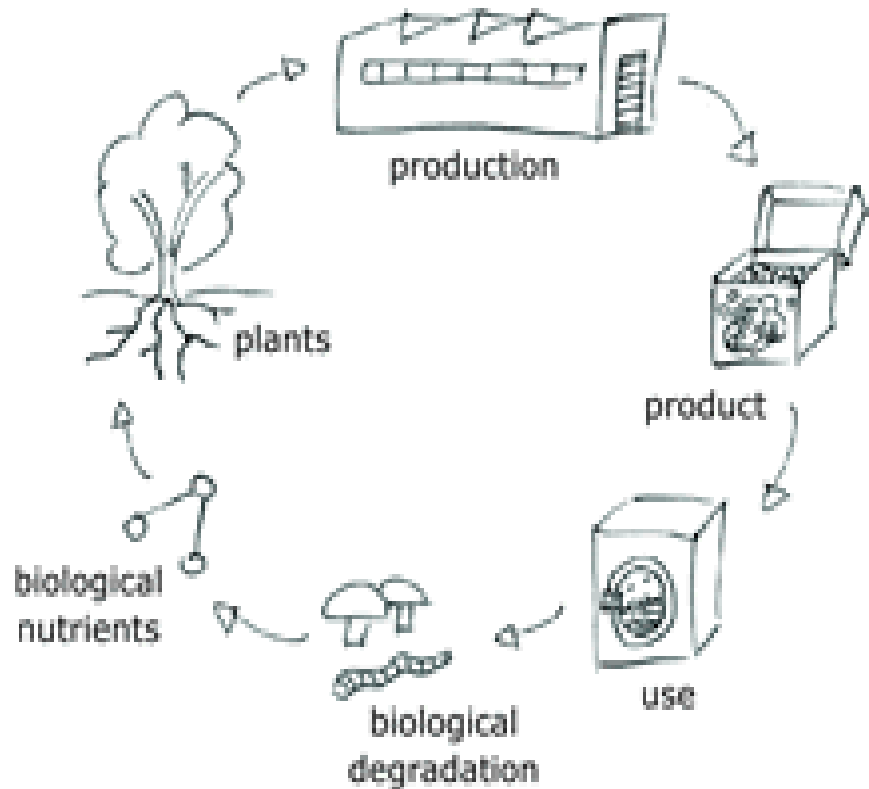


Incineration and disposal

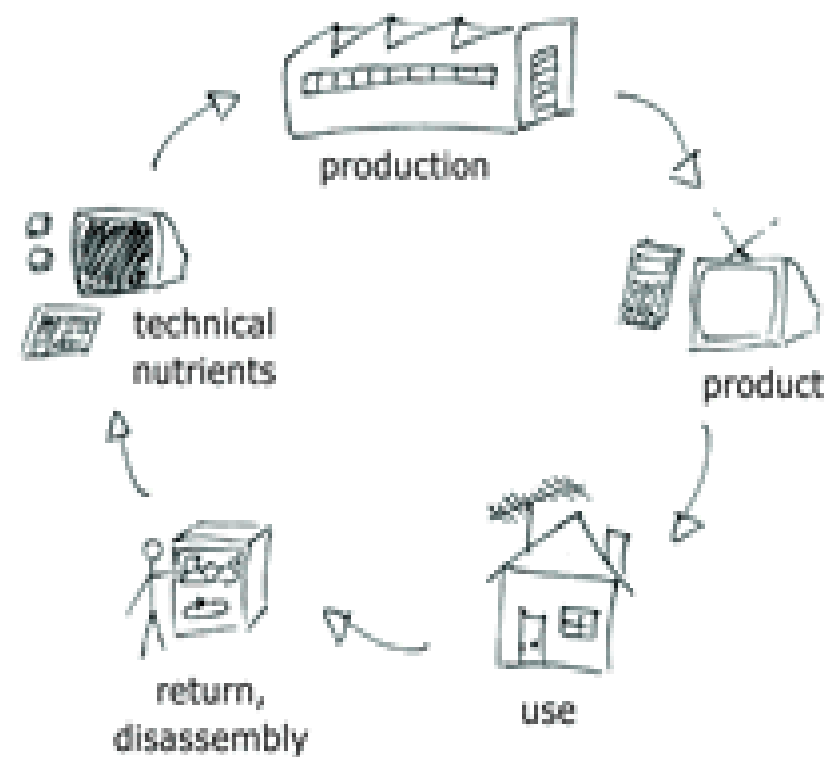




# Circular Economy



**biological cycle**



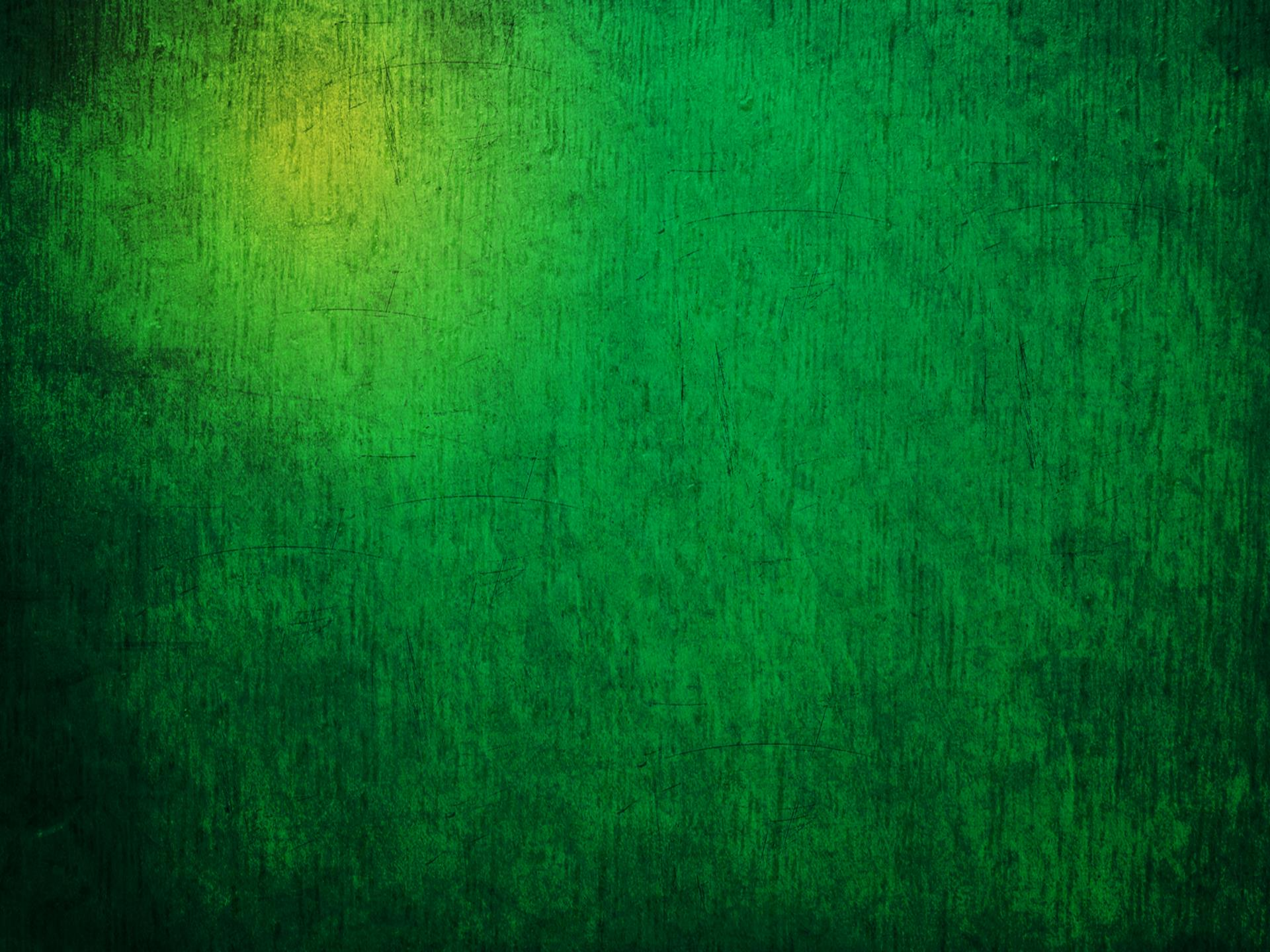
**technical cycle**













# Eco-design - Examples

## PHILIPS

### Green Flagship Products

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A Philips Green Flagship product that either

- Has the best environmental performance in the market, or
- Is the most innovative environmental friendly product in its portfolio, or
- Is the best environmental solution in its application area.

A Philips Green Flagship is benchmarked in six green focal areas and must perform significantly better (>10%) in at least three of the these green focal areas:



Weight



Recycling and disposal



Lifetime reliability



Energy efficiency



Packaging



Hazardous substances

# Eco-design - Examples

## PHILIPS

### Green Flagship Brightview XCT Scanner

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Compared to its predecessor, the Precedence 16, this Green Product's environmental benefits include

- 64% reduction in energy use,
- 59% reduction in product weight





TESLA

394

KM (续航里程)

秒 (0-100)







# zipcar.

wheels when you want them





®





method.

clementine

naturally-derived hand wash

clémentine

savon à mains d'origine naturelle

354 mL (12 FL. OZ.)

method.

cucumber

naturally-derived hand wash

courgette

savon à mains d'origine naturelle

354 mL (12 FL. OZ.)

method.

sea minerals

naturally-derived hand wash

minéraux de mer

savon pour les mains à base naturelle

354 mL (12 FL. OZ.)

method.

french lavender

naturally-derived hand wash

vande française

savon à mains d'origine naturelle

354 mL (12 FL. OZ.)

**Key  
Activities**

**Value  
Proposition**

**Customer  
Relationships**

**Key  
Partners**

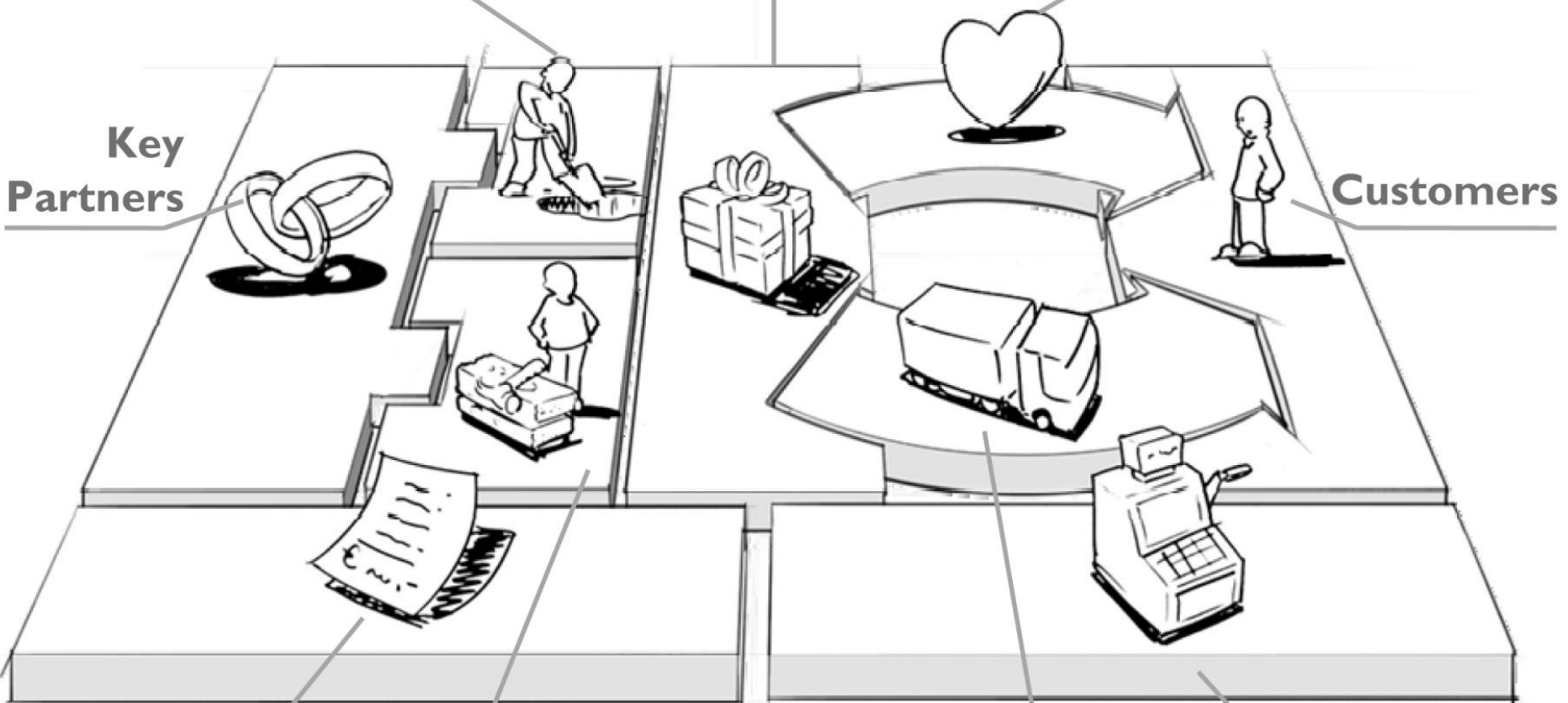
**Customers**

**Costs**

**Key  
Resources**

**Channels**

**Revenue**







**xerox**

# Eco-design - Examples

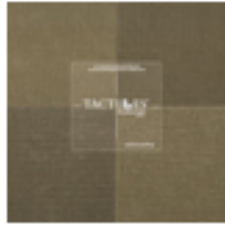
InterfaceFLOR™

## Green product examples



**Opening Night™**

This collection is comprised of InterfaceFLOR hybrid yarn, a blend of nylon bio-based fibre of Polylactic Acid (PLA). PLA fibers are derived from starch based agricultural waste materials such as non food grade corn.



**TacTiles™**

TacTiles contains no liquid components, using them virtually eliminated the issue of Volatile Organic Compounds (VOCs) during carpet installation.



**Rawhide™**

Rawhide offers 4% renewable content (fibre) and 57% total recycled content.



**Chenille Warp™**

Depending on the colourway, Chenille Warp offers 62-65% total recycled content.





**Fotosfera.**

**First carpet with a  
bio-based nylon**











USED PATAGONIA GEAR  
POWERED BY



List your used Patagonia Clothing and Gear.





# IFIXIT

WE HOLD THESE TRUTHS TO BE SELF-EVIDENT

## SELF-REPAIR MANIFESTO:

### REPAIR IS BETTER THAN RECYCLING.

MAKING OUR THINGS LAST LONGER IS BOTH MORE EFFICIENT AND MORE COST-EFFECTIVE THAN MINING THEM FOR RAW MATERIALS.

### REPAIR SAVES THE PLANET.

EARTH HAS LIMITED RESOURCES AND WE CAN'T RUN A LINEAR MANUFACTURING PROCESS FOREVER. THE BEST WAY TO BE EFFICIENT IS TO REUSE WHAT WE ALREADY HAVE!

### REPAIR SAVES YOU MONEY.

FIXING THINGS IS OFTEN FREE, AND USUALLY CHEAPER THAN REPLACING THEM. DOING THE REPAIR YOURSELF SAVES SERIOUS DOUGH.

### REPAIR TEACHES ENGINEERING.

THE BEST WAY TO FIND OUT HOW SOMETHING WORKS IS TO TAKE IT APART!

### IF YOU CAN'T FIX IT, YOU DON'T OWN IT.

REPAIR CONNECTS PEOPLE AND DEVICES, CREATING BONDS THAT TRANSCEND CONSUMPTION. SELF-REPAIR IS SUSTAINABLE.



REPAIR CONNECTS YOU WITH YOUR THINGS ◊ REPAIR EMPOWERS AND EMBOLDENS INDIVIDUALS  
REPAIR TRANSFORMS CONSUMERS INTO CONTRIBUTORS ◊ REPAIR INSPIRES PRIDE IN OWNERSHIP  
REPAIR INJECTS SOUL AND MAKES THINGS UNIQUE ◊ REPAIR IS INDEPENDENCE  
REPAIR REQUIRES CREATIVITY ◊ REPAIR IS GREEN ◊ REPAIR IS JOYFUL  
REPAIR IS NECESSARY FOR UNDERSTANDING OUR THINGS ◊ REPAIR SAVES MONEY AND RESOURCES

### WE HAVE THE RIGHT:

TO OPEN AND REPAIR OUR THINGS WITHOUT VOIDING THE WARRANTY  
TO DEVICES THAT CAN BE OPENED ◊ TO ERROR CODES AND WIRING DIAGRAMS  
TO TROUBLESHOOTING INSTRUCTIONS AND FLOWCHARTS

TO REPAIR DOCUMENTATION FOR EVERYTHING ◊ TO CHOOSE OUR OWN REPAIR TECHNICIAN  
TO REMOVE 'DO NOT REMOVE' STICKERS ◊ TO REPAIR THINGS IN THE PRIVACY OF OUR OWN HOMES  
TO REPLACE ANY AND ALL CONSUMABLES OURSELVES  
TO HARDWARE THAT DOESN'T REQUIRE PROPRIETARY TOOLS TO REPAIR  
TO AVAILABLE, REASONABLY PRICED SERVICE PARTS

INSPIRED BY MISTER JALOIPP'S MAKER'S BILL OF RIGHTS AND PLATFORM 21'S REPAIR MANIFESTO

**iFixit**

JOIN THE REPAIR REVOLUTION AT IFIXIT.COM

The screenshot shows a web browser window displaying the iFixit website. The URL is [http://www.ifixit.com/smartphone\\_repairability/ports/scoreTableTop](http://www.ifixit.com/smartphone_repairability/ports/scoreTableTop). The page lists several smartphones with their repairability scores:

Smartphone Model	Year	Score	Notes
HTC Surround	2010	5	<ul style="list-style-type: none"><li>Battery is relatively easy to replace.</li><li>Accessing the internal MicroSDHC card voids the warranty.</li><li>Very difficult to access the front panel and LCD for replacement.</li></ul>
Motorola Droid 4	2012	4	<ul style="list-style-type: none"><li>LCD and front glass are not fused and can be replaced individually.</li><li>Tons of adhesive seals the phone and its components.</li><li>Replacing the front glass requires complete phone disassembly.</li></ul>
Motorola Droid RAZR	2011	4	<ul style="list-style-type: none"><li>Battery is relatively easy to replace.</li><li>All plastic frames and casings are incredibly tedious to remove.</li><li>The front panel is adhered to the display.</li></ul>
Apple iPhone	2007	2	<ul style="list-style-type: none"><li>Standard Phillips screws used throughout.</li><li>Hidden clips make it nearly impossible to open rear case without damaging it.</li><li>Soldered battery is very difficult to replace.</li></ul>
HTC One	2013	1	<ul style="list-style-type: none"><li>Solid external construction improves durability.</li><li>Virtually impossible to open without extreme damage to rear case.</li><li>Battery is buried under motherboard and adhered to midframe.</li></ul>





89%





# THE BOY & THE BUBBLE

£850.00









# Industry 4.0



YESTERDAY



TOMORROW



# CITY 2.0



The Centre for Sustainable Design®

**64%**

**86%**







**CISCO**™

**SIEMENS**









**imaginarium**









# **Re-Industrialisation 1.0**

**Decentralisation**

**Low Carbon**

**Circular**



# MAKERS

**THE NEW  
INDUSTRIAL  
REVOLUTION**

**CHRIS ANDERSON**

*Author of the bestseller [The Long Tail](#)*



EXPERTS

http://www





# web 2.0

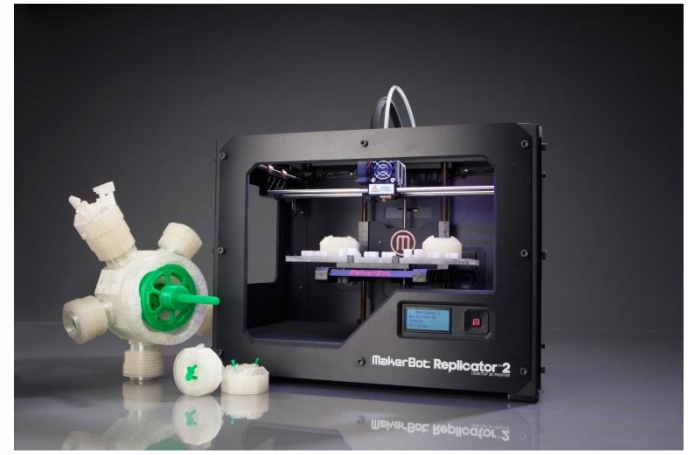
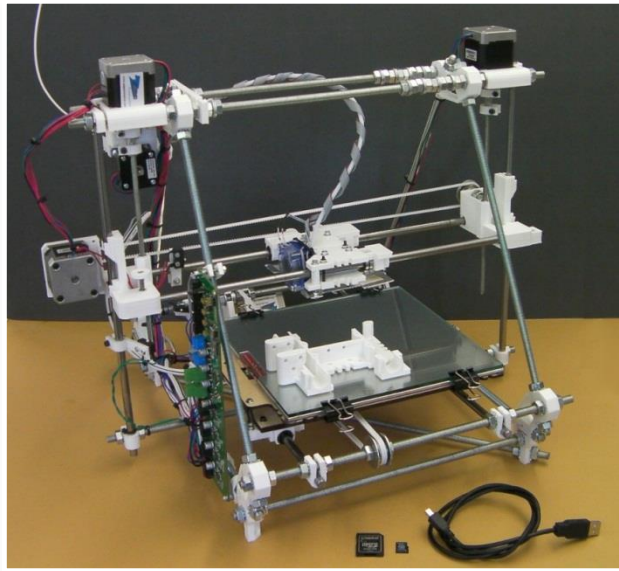






# 3D Printing

## RepRap



**MakerBot**  
INDUSTRIES



**Thingiverse**



The Centre for Sustainable Design®







# SMEs





# ECOMIND



# DIBS

# Eco-innovate!

A guide to eco-innovation  
for SMEs and business coaches





JRC SCIENCE FOR POLICY REPORT

2035

## Paths towards a sustainable EU economy

Sustainable transitions and the potential of eco-innovation for jobs and economic development in EU eco-industries 2035

Foresight Series

Laurent Bontoux  
Daniel Bengtsson

2015



**BROAD-BASED**

**MICRO**

**START-UPS**

**ISOLATED**

**FUNDING**

**PRODUCT-  
ORIENTED**

**NOT CLEANTECH**

**NOT  
DISRUPTIVE**

**MARKETING**

**NOT INNOVATIVE**





**AER**  
**1985-2005**  
20 years of promoting  
regional democracy  
throughout Europe for  
the benefit of  
the citizens



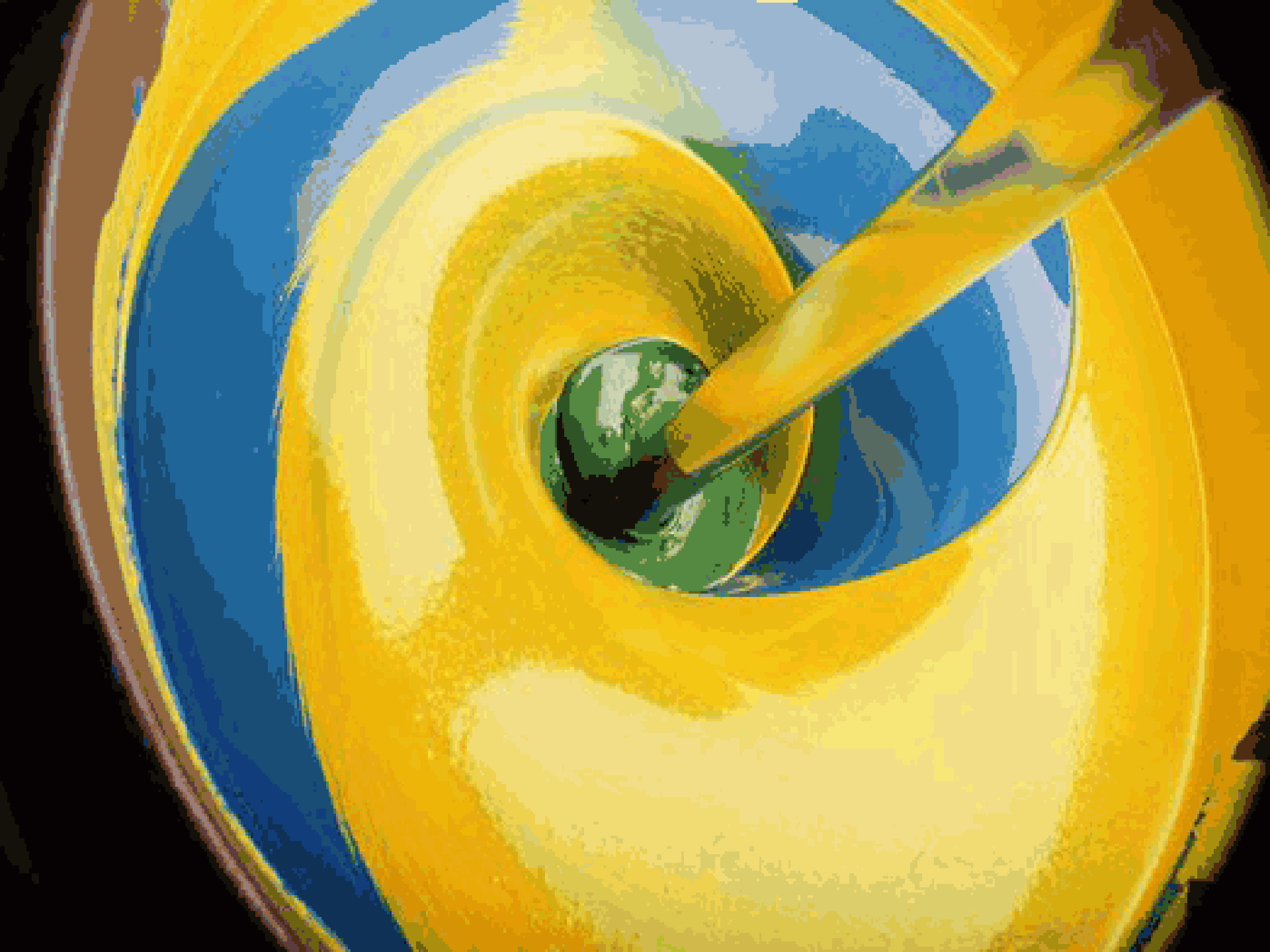
# SUPPORT SYSTEMS















**CREATE**

**YOUR**

**FUTURE**







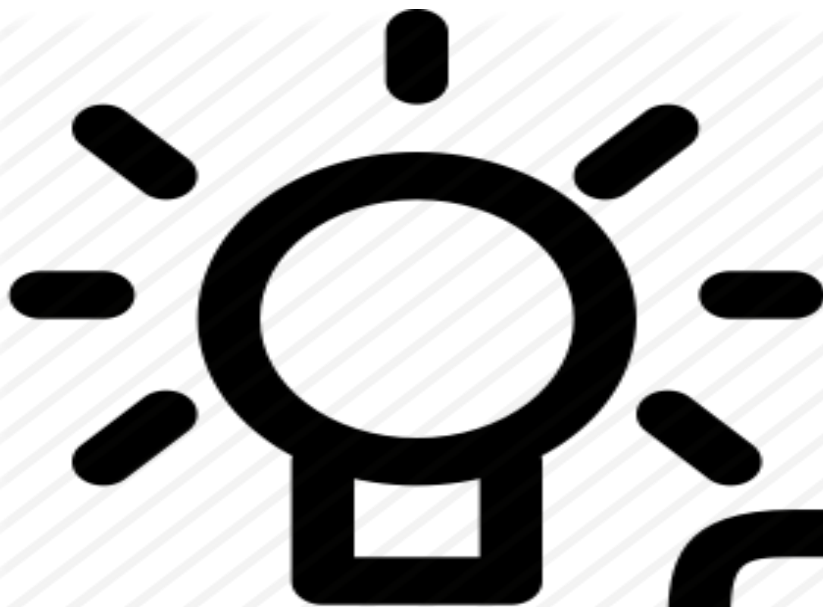
OPEN

24 HOURS















BOTTLE MADE WITH  
**OCEAN  
PLASTIC**  
That's why I'm green

BOTTLE MADE WITH  
**OCEAN  
PLASTIC**  
That's why I'm blue

**method.**  
**DISH + HAND**  
sweet water  
odor eliminating 2-in-1 soap  
this bottle is made with recovered ocean plastic  
343mL (11.6 FL OZ)

**method.**  
**DISH + HAND**  
sea minerals  
odor eliminating 2-in-1 soap  
this bottle is made with recovered ocean plastic  
343mL (11.6 FL OZ)





**Transition or  
Transformation**

**Evolution or  
(R)evolution**



# TOP DOWN

# BOTTOM UP





# SUSTAINABLE FUTURE?



# Contact Details

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