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ECO INNOVATORS

NEXT-GEN SUSTAINABILITY THROUGH SCIENCE AND INNOVATION



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Foundations Sustainable Innovation & Youth Empowerment

1. Introduction to Eco Innovators: mission and sc
2. Overview of Eco-Innovators Guide & Sustainabl Product Toolkit
3. Introduction to sustainability and sustainable products
4. Fundamentals of sustainable product design

Foundations Sustainable Innovation & Youth Empowerment

1. Introduction to Eco Innovators: mission and scope



Foundations Sustainable Innovation & Youth Empowerment

1. Introduction to Eco Innovators: mission and scope

- The EcoInnovators project aims to empower young people (16-
by developing their skills in sustainable product development a
increasing their digital competencies.

- Through hands-on training, the project will promote youth
entrepreneurship with a focus on environmental sustainability.

- The primary objective is to foster cooperation, innovation and c
engagement across Europe, while equipping young people with
tools to tackle global environmental challenges.

Foundations Sustainable Innovation & Youth Empowerment

1. Introduction to Eco Innovators: mission and scope

Results of the project:

1. **Eco-Innovators Guide**

✓ Serves as a resource aimed at promoting eco-innovation.

✓ Provides guidance and support for sustainable practices.

2. **GreenLink Hub: Web & Mobile Platform**

✓ This hub provides open access to all education materials.

✓ It serves as a collaborative space for young innovators, educators, a
sustainability advocates to learn, share, and co-create eco-friendly
solutions

Foundations Sustainable Innovation & Youth Empowerment

1. Introduction to Eco Innovators: mission and scope

Results of the project (continued):

3. **Sustainable Product Toolkit**
- ✓ Offers a set of tools designed to support the development of sustainable products.
- ✓ Facilitates the creation of environmentally friendly solutions.

4. **Online Courses & Case Studies**
- ✓ Offers self-paced learning modules on topics like sustainable product design, green innovation, and circular economy, combining videos, quizzes, and practical activities
- ✓ Showcases real-world examples of successful sustainable products, providing insp and insights for young innovators.

Foundations Sustainable Innovation & Youth Empowerment

1. Introduction to Eco Innovators: mission and scope

WP2: International Cooperation and Experience Sharing – LTT in Brussels

Key Outputs & Expected Outcomes:

❖ **Enhanced International Cooperation**
✓ Youth from France, Belgium, Portugal & Turkey collaborate on sustainability projects.
✓ Creation of lasting cross-border partnerships.

❖ **Innovative Training Materials**
✓ Development of lesson plans, workshop guides & case studies.
✓ Shared with partners, educators & NGOs.

Foundations Sustainable Innovation & Youth Empowerment

1. Introduction to Eco Innovators: mission and scope

WP2: International Cooperation and Experience Sharing – LTT in Brussels

Key Outputs & Expected Outcomes (continued): :

❖ **Hands-on Sustainability Projects**
✓ Participants design and present eco-friendly product ideas.
✓ At least 30 sustainable prototypes created locally.

❖ **Strengthened Green Skills**
✓ Improved competencies in sustainability & eco-entrepreneurship.
✓ Application in both personal & professional contexts.

1. Introduction to Eco Innovators: mission and scope

WP2: International Cooperation and Experience Sharing – LTT in Brussels

Key Outputs & Expected Outcomes (continued):

❖ **Cross-Cultural Knowledge Sharing**

✓ Exchange of sustainable practices across European countries.

✓ Promotion of mutual learning and dialogue on sustainability.

Overall Impact: WP2 empowers young adults to become active change-makers in tackling environmental challenges and implementing sustainable solutions across Europe.

2. Overview of Eco-Innovators Guide & Sustainable Product Toolkit



2. Overview of Eco-Innovators Guide & Sustainable Product Toolkit

- A comprehensive guide featuring best practices, educational materials, and project insights, serving as a toolkit for young innovators and educators to promote sustainability initiatives.

- The training program of this week will be used to constitute this guide and toolkit. In the next slides we will go through this program.

2. Overview of Eco-Innovators Guide & Sustainable Product Toolkit

❖ **Eco-Design in Practice Case Studies & Prototyping** (Guyana)

✓ Real-life examples of sustainable products

✓ Hands-on product design workshops

✓ Case study analysis (GreenLink Hub/Online Modules)

✓ Applying eco-design principles (materials, recyclability, lifecycle, etc.)

✓ First prototyping session using Toolkit

2. Overview of Eco-Innovators Guide & Sustainable Product Toolkit

❖ Education & Social Impact Eco-Innovation in Society & Learning (Turkey):

- ✓ Role of eco-innovation in education and communities
- ✓ Develop educational materials using EcoInnovators resources
- ✓ Peer-to-peer learning with sustainability focus
- ✓ Design for educational/social impact

2. Overview of Eco-Innovators Guide & Sustainable Product Toolkit

❖ Green Entrepreneurship Youth-led Innovation Projects (Portugal):

✓ Project development: idea → prototype

✓ Define value, feasibility, sustainability

✓ Team collaboration, facilitation, peer learning

2. Overview of Eco-Innovators Guide & Sustainable Product Toolkit

❖ **Presentation & Future Pathways Showcase & Next Steps (Belgium):**

✓ Present projects: design, impact, innovation
✓ Peer and facilitator feedback (using Guide criteria)
✓ Explore GreenLink Hub and future learning options
✓ Promote collaboration and youth leadership in sustainability

3. Introduction to sustainability and sustainable products



3. Introduction to sustainability and sustainable products

- Sustainability is no longer a choice; it is a global necessity.
- This presentation explores how individuals, companies, and societies can adopt sustainable principles and desig products that respect the planet and future generations.
- The goal is to understand the meaning of sustainability, the importance of sustainable products, and the global trends that drive this movement.

3. Introduction to sustainability and sustainable products

What is Sustainability?

- Sustainability means meeting our present needs without compromising the ability of future generations to meet theirs.
- It requires balancing three dimensions:

✓ **Environmental** : protecting ecosystems and natural resources.
✓ **Social** : promoting fairness, inclusion, and well-being.
✓ **Economic** : ensuring long-term financial viability.

3. Introduction to sustainability and sustainable products

The Three Pillars of Sustainability

- ✓ **Environmental sustainability** : minimize pollution, waste, a carbon footprint.
- ✓ **Social sustainability** : ensure fair working conditions, resp human rights, and promote equality.
- ✓ **Economic sustainability** : build viable and resilient busine models.

Together, they form the foundation of any sustainable strat

3. Introduction to sustainability and sustainable products

Why Sustainability Matters?

- The planet faces unprecedented challenges: climate cha biodiversity loss, and overconsumption of resources.
- At the same time, public awareness and environmental regulations are increasing.
- **Sustainability brings**:

✓ Long-term resilience
✓ Innovation opportunities
✓ Stronger brand and customer trust

3. Introduction to sustainability and sustainable products

The UN Sustainable Development Goals (SDGs)

In 2015, the United Nations adopted 17 SDGs as a roadmap
a sustainable future.

Relevant to product design:

✓ Goal 9: Industry, Innovation and Infrastructure
✓ Goal 12: Responsible Consumption and Production
✓ Goal 13: Climate Action

Companies aligning with these goals contribute to global progress.

3. Introduction to sustainability and sustainable products

From Traditional to Sustainable Products

- Traditional products focus on **cost, aesthetics, and functionality** only.
- Sustainable products add a new layer: **responsibility** — considering the impact on nature, society, and future use

Shift from:

✓ **Linear model**: Take -> Make -> Waste

✓ To **Circular model**: Reduce -> Reuse -> Recycle

3. Introduction to sustainability and sustainable products

Characteristics of Sustainable Products

- **Sustainable products**:

✓ Use renewable or recycled materials
✓ Consume less energy and water
✓ Are durable and repairable
✓ Use minimal and recyclable packaging
✓ Are ethically produced

- **These attributes reduce environmental impact across the product's life cycle.**

3. Introduction to sustainability and sustainable products

Examples of Sustainable Products:

✓ Bamboo toothbrushes and reusable bottles
✓ Electric or hybrid cars
✓ Solar-powered lamps
✓ Clothing made from recycled fibers
✓ Compostable packaging materials

- **Such products combine innovation, practicality, and respe for the environment.**

3. Introduction to sustainability and sustainable products

Benefits of Sustainable Products

- **For consumers**: better health, long-term savings, and ethi satisfaction.
- **For companies**: innovation, new markets, and brand differentiation.
- **For the planet**: lower waste, cleaner air and water, and resource conservation.

3. Introduction to sustainability and sustainable products

Challenges of Sustainability

- Despite progress, challenges persist:

✓ Higher upfront costs
✓ Limited availability of green materials
✓ Complexity in measuring impact
✓ Greenwashing (false sustainability claims)

- Solutions require collaboration, transparency, and educat

3. Introduction to sustainability and sustainable products

The Circular Economy

- The circular economy replaces “end-of-life” with regeneration.
- It’s based on five principles:

Reduce – Reuse – Recycle – Repair – Redesign

Example: IKEA’s take-back and refurbishment programs.

- **Circular models create value while preserving resources.**

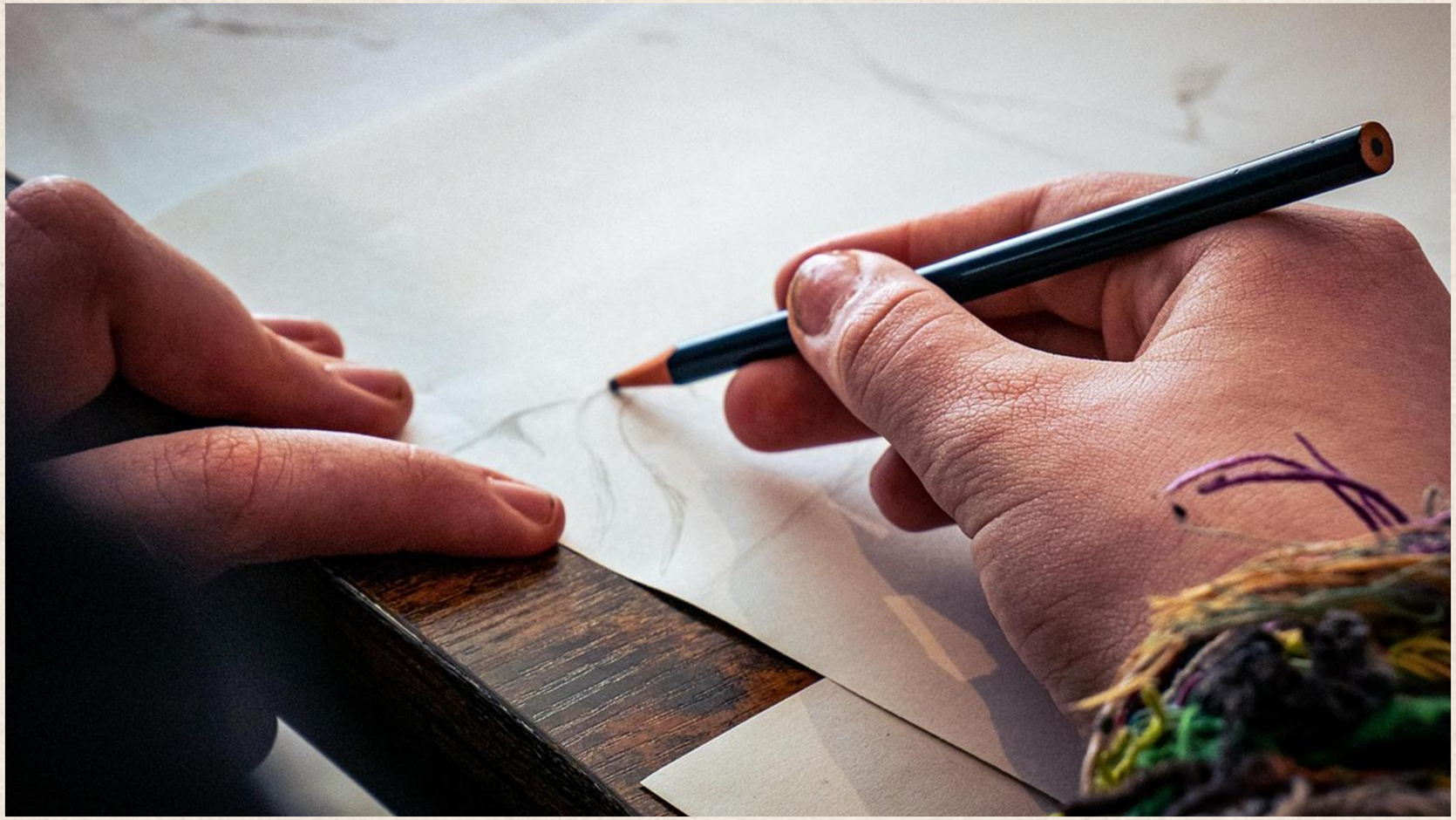
3. Introduction to sustainability and sustainable products

Summary

- Sustainability is essential for human and planetary well-being.
- Sustainable products combine innovation and ethics.
- The transition from linear to circular systems ensures lon term resilience.

- “*There is no Plan B because there is no Planet B.*” / Ban Ki-Moo

4. Fundamentals of sustainable product design



4. Fundamentals of sustainable product design

- Design defines the impact of a product before it even exists.

- Sustainable product design aims to create solutions that minimize harm, optimize performance, and benefit both people and the planet.

4. Fundamentals of sustainable product design

What is Sustainable Product Design?

- Sustainable product design is an approach that cor
  the entire life cycle, from raw materials to end-of-lif
- Its goals:

✓ Minimize environmental impact

✓ Enhance user and social value

✓ Ensure economic feasibility

4. Fundamentals of sustainable product design

The Life Cycle Perspective

- A sustainable designer thinks in stages:

1. **Material extraction** : Where materials come from
2. **Manufacturing** : Energy and waste efficiency
3. **Distribution** : Packaging and transport impact
4. **Use** : Energy consumption and maintenance
5. **End of life** : Reuse, recycle, or biodegrade

4. Fundamentals of sustainable product design

Eco-Design Principles

- Key rules of eco-design:

✓ Use fewer and better materials
✓ Extend product lifespan
✓ Make parts easy to repair or replace
✓ Avoid toxic substances
✓ Design efficient packaging

- Eco-design transforms sustainability into creativity.

4. Fundamentals of sustainable product design

Design for Circularity

- Circular design eliminates the concept of waste.
- It focuses on:

✓ Modular design: easy disassembly and upgrade
✓ Reuse: second life for components
✓ Remanufacturing: reusing valuable parts

Example: Fairphone – a modular smartphone designed for longevity.

4. Fundamentals of sustainable product design

Sustainable Materials

- Choosing the right material changes everything.

Type	Example	Benefits
Renewable	Bamboo, cork	Grows back naturally
Recycled	PET bottles → textiles	Reduces waste
Biodegradable	PLA plastic	Returns safely to nature

Designers must balance performance and sustainabi

4. Fundamentals of sustainable product design

Energy Efficiency in Production

- Energy efficiency reduces both costs and carbon emissions.

✓ Use renewable energy (solar, wind)
✓ Optimize processes with smart machines
✓ Recover heat and recycle water
✓ Track energy data with IoT sensors

4. Fundamentals of sustainable product design

Packaging and Logistics

- Often overlooked, packaging has a major footprint.
- Strategies:

✓ Use recyclable or compostable materials
✓ Reduce volume and weight
✓ Source locally to minimize transport emissions
✓ Implement product return systems

4. Fundamentals of sustainable product design

Measuring Sustainability

- Design decisions must be backed by data.
- Key tools:

✓ Life Cycle Assessment (LCA)

✓ Carbon footprint analysis

✓ Environmental Product Declarations (EPDs)

- Certifications (e.g., EU Ecolabel, ISO 14001) enhanc credibility.

4. Fundamentals of sustainable product design

Role of Innovation and Technology

- Technology enables sustainable design:

✓ Artificial Intelligence : optimize materials & supply c

✓ 3D printing : less waste and local production

✓ Blockchain : trace materials

✓ Smart sensors : monitor energy use

- Innovation drives sustainability into the digital age.

4. Fundamentals of sustainable product design

Case Study 1: IKEA (Sweden)

https://www.ikea.com/global/en/our-business/sustainability/our-circular-a



4. Fundamentals of sustainable product design

Case Study 1: IKEA (Sweden)

- Circular Design for Everyday Life

✓ Over 60% of materials are renewable or recycled.

✓ Design for repair & reuse — modular, easy-to-disassemble furniture.

✓ Buy-back programs for used furniture.

✓ Goal: 100% renewable energy and circular business by 20

✓ Shows how sustainability can scale at affordable prices.

4. Fundamentals of sustainable product design

Case Study 2: Patagonia (USA)

https://eu.patagonia.com/



4. Fundamentals of sustainable product design

Case Study 2: Patagonia (USA)

- Patagonia is a pioneer in sustainable design.

✓ Uses recycled fabrics and organic cotton

✓ Offers repair services (“Worn Wear”)

✓ Encourages conscious consumption

✓ Transparent supply chain

- Result: strong loyalty and authentic brand image.

4. Fundamentals of sustainable product design

Case Study 3 : LUSH (United Kingdom)

https://www.lush.com/



4. Fundamentals of sustainable product design

Case Study 3 : LUSH (United Kingdom)

- Sustainable Cosmetics & Zero-Waste Packaging

✓ Handmade cosmetics from natural and ethical ingredients.
✓ Over 60% of products sold “naked” — without packaging.
✓ Uses recycled and compostable materials when packaging is ne
✓ Promotes fair trade and cruelty-free supply chains. Encourages customers to return containers for reuse or recycling.

- *Innovating in packaging can transform an entire industry.*

4. Fundamentals of sustainable product design

Case Study 4 : Moustache Bikes (France)

https://rutile.bike/collections/velo-electrique-moustache



4. Fundamentals of sustainable product design

Case Study 4 : Moustache Bikes (France)

- Local Innovation for Green Mobility

✓ French manufacturer of electric bikes, 100% designed and assembled in the Vosges.

✓ Promotes sustainable urban transport and reduced car dependen

✓ Uses durable components and recyclable aluminum frames.

✓ Encourages repairability and long product lifespan.

✓ Supports the local economy and short supply chains.

- *Local design and green mobility go hand in hand.*

4. Fundamentals of sustainable product design

From Design to Market

- Design must align with the entire business model:

✓ Eco-design supports circular business models (leas
sharing, repairing)

✓ Marketing must communicate real value, not
greenwashing

✓ Consumers play a role by choosing sustainable opt

4. Fundamentals of sustainable product design

Skills for Future Designers

- Tomorrow’s sustainable designers need:

✓ Systems thinking and holistic vision

✓ Environmental and social awareness

✓ Collaboration across disciplines

✓ Creative problem-solving

- **Education and mindset change are essential.**

4. Fundamentals of sustainable product design

Conclusion

- Sustainable design combines creativity, innovation, responsibility.
- Designers are the architects of a better world — eve choice matters.

✓ *"Good design is sustainable design."* : Implies longe ethics, and harmony with nature.

THANK YOU FOR YOUR ATTENTION!

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