

## Unit 2.1 Economic Sustainability: best practice

### PUREDENIM

PureDenim is an Italian company specialising in the production of sustainable denim and revolutionizing the denim production. Fashion business is among the most polluting industries in the world and the denim production represents the highest polluting processes in the textile industry. For this reason, PureDenim took up the legacy of Italdenim, which already in 2014 signed up to Greenpeace's 'Detox' protocol for the elimination of numerous classes of chemicals from every stage of production. PureDenim has successfully reduced the amount of chemicals and water in the jeans manufacturing process. Pure Denim ensures eco-sustainability and Circular re-design. The denim of this company is the result of an overall re-design of the production system, inspired by the principles of the circular economy, planned to combine technology and new materials in order to minimise waste. PureDenim exclusively purchases certified organic yarns and regenerated cotton from both post and pre consumer waste. Regenerated cotton is sourced from textile waste, so its production does not require water.

### INNOVATIVE AND SUSTAINABLE TECHNOLOGIES

#### smart INDIGO

##### SMART INDIGO

PureDenim is the first company in the world to produce the dye, liquid indigo, in-house. Born from an idea patented in Switzerland by David Crettenand and marketed by Sedo Engineering SA, it was turned into an operational industrial process for the first time thanks to PureDenim. Traditionally used dyes are based on reduction through hydrosulphites, which are often extremely polluting and hazardous to health. Smart Indigo uses only indigo pigment, caustic soda, water and electricity: it is an electrochemical process, so it does not use hydrosulphites.

##### Benefits:

- Due to the higher colouring power, less product can be used, even to produce very dark shades
- By using less product, there is a consequent saving of water
- On-site production reduces CO2 emissions by a factor of six



##### ECOSONIC

Water consumption is one of the biggest problems in denim production. Thanks to EcoSonic, which uses a physical process called ultrasonic cavitation. Through two generators, high-frequency waves are produced that make the water move at high speed and create tiny air bubbles that explode on contact with the fabric, releasing their energy.

##### Benefits:

- Only 0.53L of water per metre of fabric used
- 40% less energy than traditional processes





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## NATURALRECO

NaturalReco is a film-forming product that protects the yarn during processing and promotes bonding, made entirely from industrial food processing waste

Benefits:

- Elimination from the production process of the polyvinyl alcohol
- Reduction of microplastics that are released into the water, both during industrial and domestic washing
- Reduction of water and energy consumption, resulting in lower CO2 emissions into the air

## SOURCES

PUREDENIM Webiste

<https://puredenim.it/about-us/>

## FOR MORE INFORMATION

RiverBlue movie

<https://puredenim.it/river-blue/>

PureBook

<https://puredenim.it/wp-content/uploads/2023/09/PureDenim-purebook.pdf>



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