



**I'm
green**

TM

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packaging

BIOPOLYMERS

www.bechpackaging.com

WHAT ARE BIOPLASTICS?

BIOPLASTICS ARE BIOBASED, BIODEGRADABLE OR BOTH!



BIOBASED

RENEWABLE RAW MATERIAL FEEDSTOCK



BIODEGRADABLE

CHEMICAL PROCESS IN WHICH MICRO-ORGANISMS
CONVERT MATERIALS INTO NATURAL SUBSTANCES
(DEPENDING ON THE CONDITIONS)

BIOPLASTICS



BIOPOLYMERS



BIOBASED

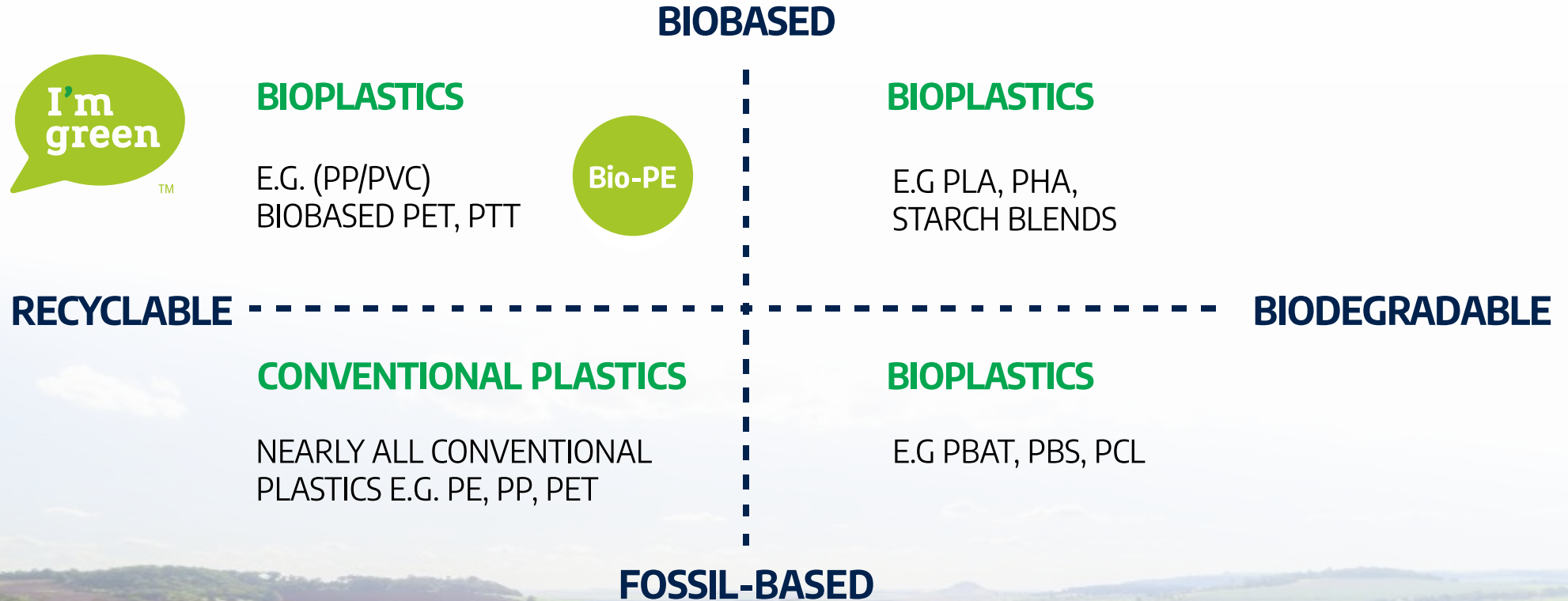
**MEANS THAT THE MATERIAL
OR PRODUCT IS (PARTLY) DERIVED
FROM BIOMASS (PLANTS).**

**A DYNAMIC INDUSTRY
GROWING AT A RATE OF
ROUGHLY 20 PERCENT
PER YEAR**

SAVING FOSSIL RESOURCES BY USING BIOMASS PROVIDES
A UNIQUE POTENTIAL OF CARBON FOOTPRINT REDUCTION.
CAN POSSESS PROPERTIES THAT ARE IDENTICAL TO THEIR
CONVENTIONAL VERSIONS. CAN BE RECYCLED IN EXISTING
RECYCLING STREAMS.

BIOPLASTICS

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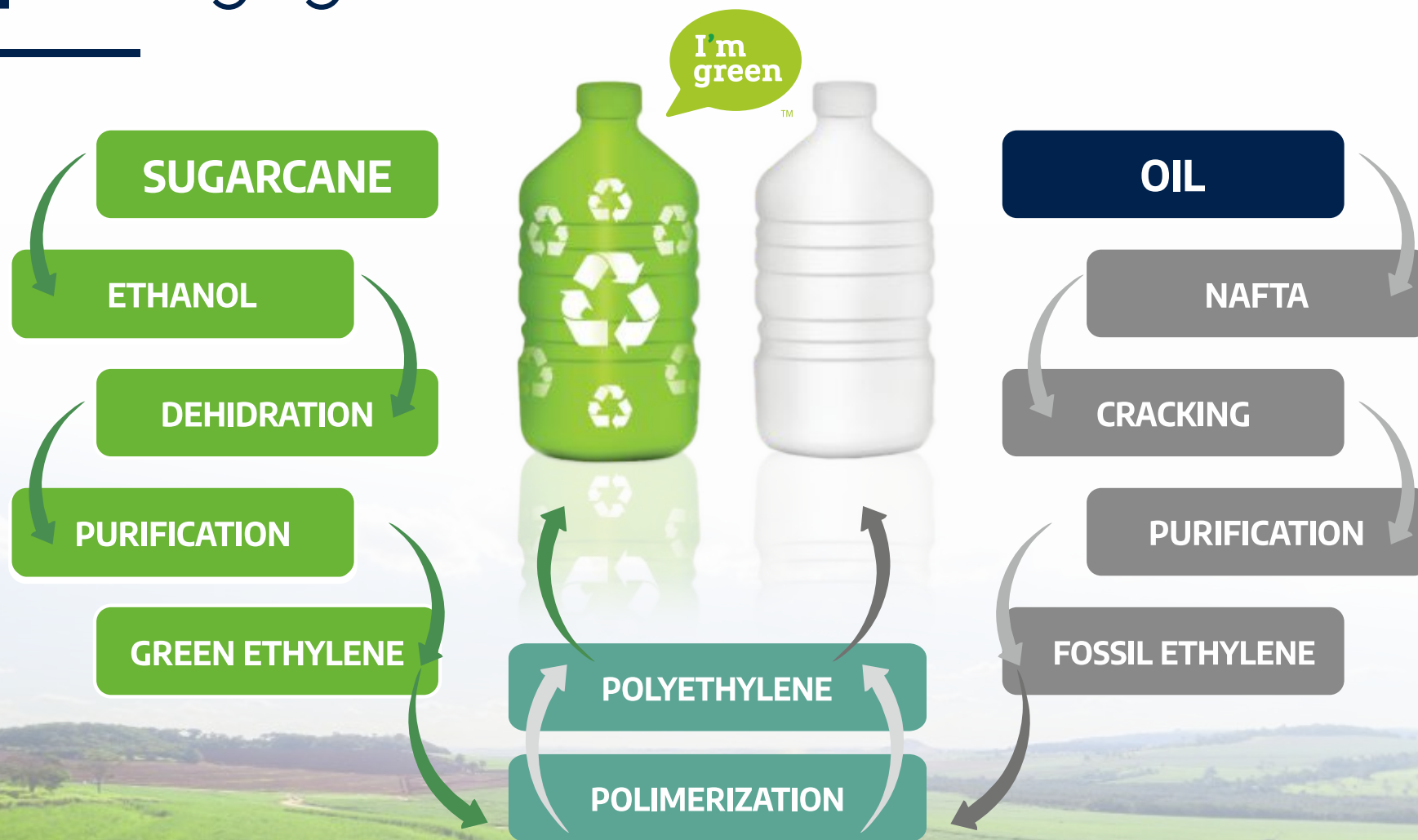


I'M GREEN™

**I'm
green**

TM

GREEN POLYETHYLENE X FOSSIL POLYETHYLENE



TECHNOLOGY: THE PRODUCTION ROUTE FOR GREEN POLYETHYLENE AND THE FOSSIL POLYETHYLENE ARE EXACTLY THE SAME, THEREFORE THE GREEN POLYMER HAS GOT THE SAME CHARACTERISTICS, QUALITY AND PROPERTIES THAN THE FOSSIL EQUIVALENT.

GREEN PE CYCLE



**1 HECTARE
OF LAND**



**77 TONS OF
SUGARCANE**



**6700 LITERS OF
ETHANOL**



**3 TONS OF
GREEN ETHYLENE**

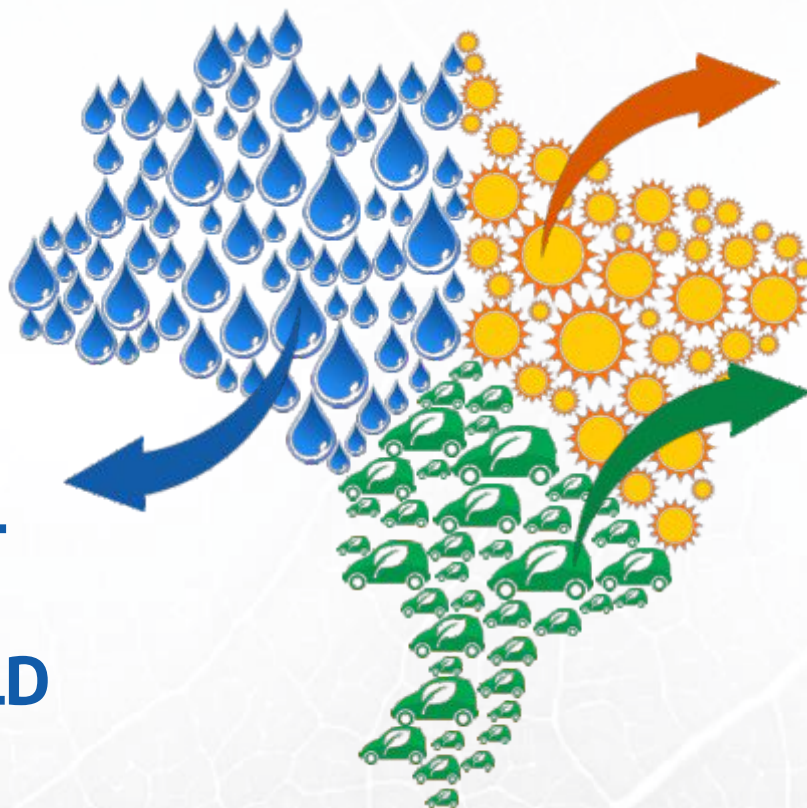


**3 TONS OF
I'M GREEN
POLYETHYLENE**

BRAZILIAN SCENARIO

FAVORABLE ASPECTS FOR THE DEVELOPMENT OF BIOPOLYMERS

**THE LARGEST
WATERSHED
IN THE WORLD**

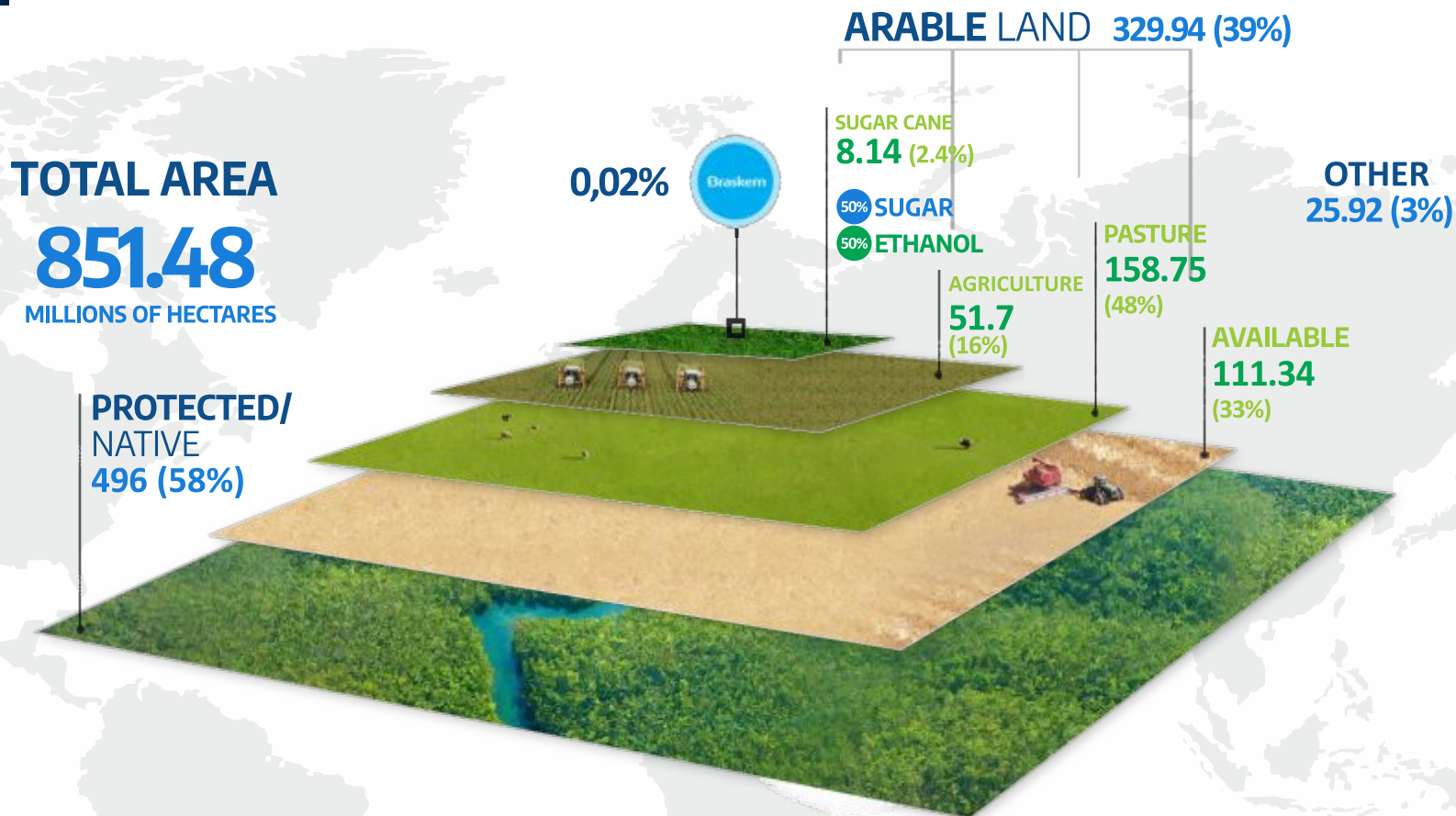


**INTENSE SOLAR
RADIATION
AND CLIMATE
DIVERSIFICATION**

**PIONEER IN RESEARCH
AND DEVELOPMENT
OF BIOFUELS**

LAND USAGE

SIGNIFICANT POTENTIAL FOR SUSTAINABLE GROWTH

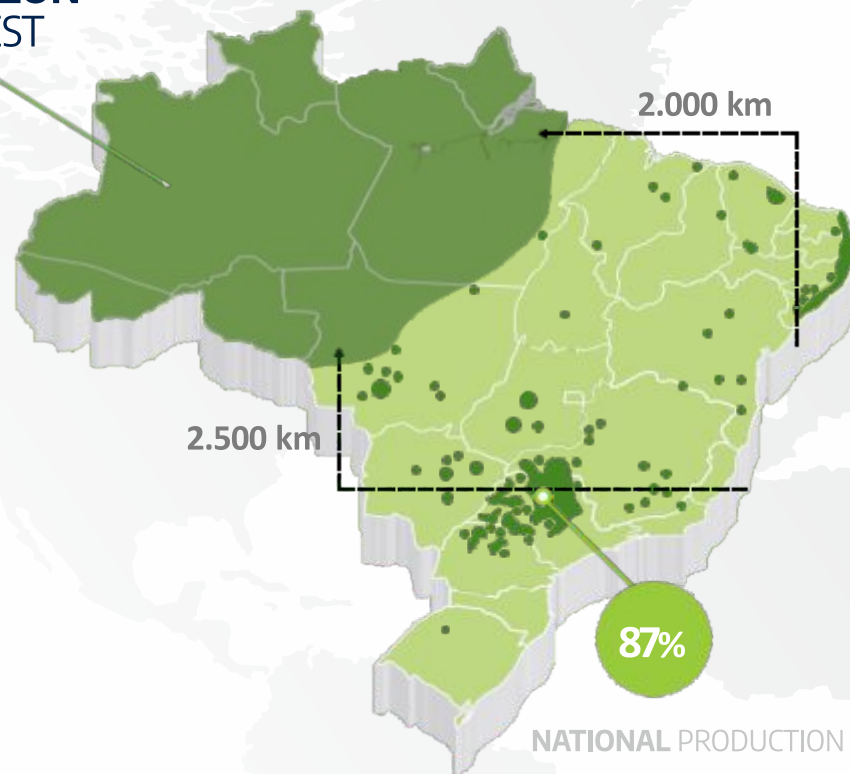


BRASKEM'S CAPACITY OF I'M GREEN™ POLYETHYLENE PRODUCTION: 200 KTON/YEAR

460 MILLIONS LITERS OF ETHANOL = APPROX. 68 THOUSAND HECTARES

BRAZILIAN AGROECOLOGICAL ZONING PROGRAMME

AMAZON
FOREST



**SOIL AND WEATHER
CONDITION = PRODUCTIVITY**
(NO EXPANSION TO AMAZON AND PANTANAL)

AREAS FOR SUGARCANE EXPANSION:

AREAS WITH PROPER CONDITIONS FOR
MECHANICAL HARVESTING

DEGRADED PASTURE LAND

REGIONS WITH LOWER NEED FOR WATER
USAGE IN PRODUCTION

RESPECT FOR FOOD SECURITY

CO₂ FOOTPRINT REDUCTION



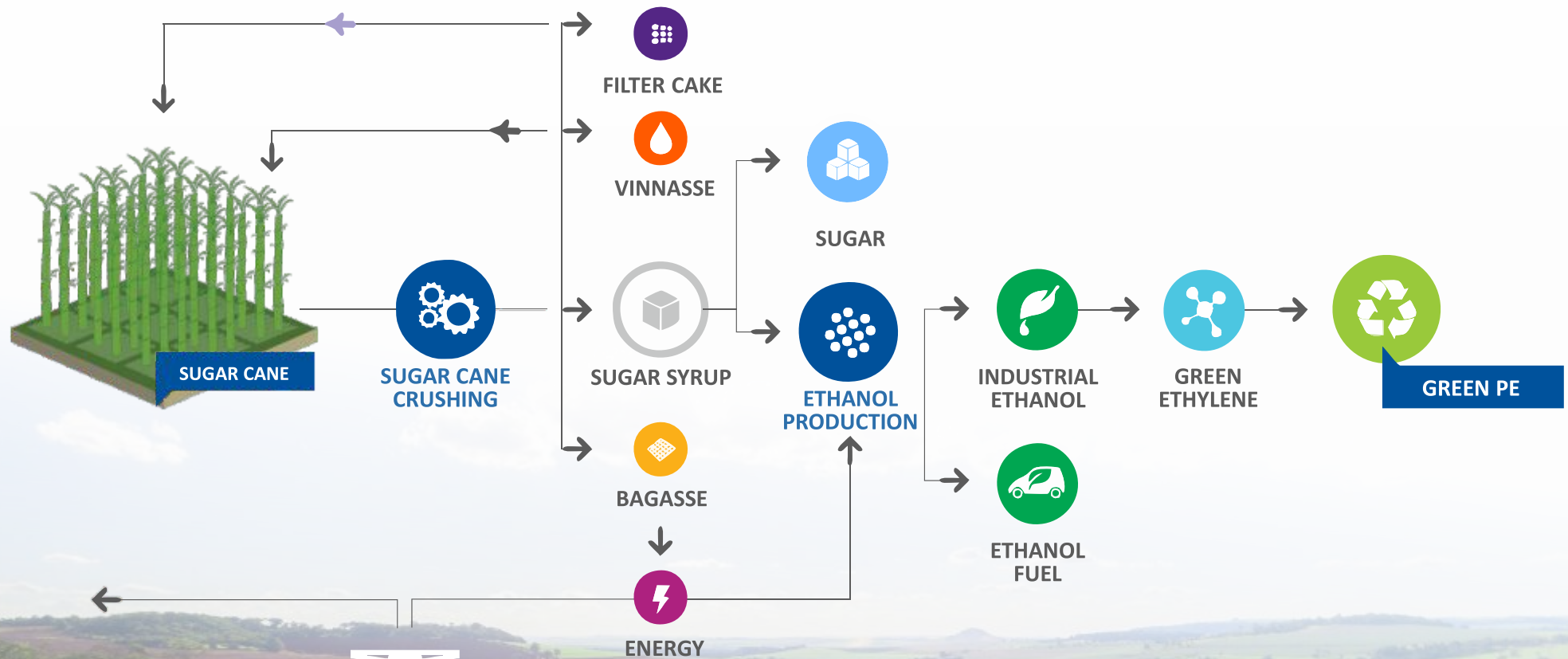
CO₂ EMISSION
PER PERSON
4t CO₂ eq / YEAR



EACH 100T GREEN PE
= 100 PEOPLE'S
EMISSION

SUGARCANE ETHANOL

EFFICIENT USE OF RESOURCES



CARBON FOOTPRINT COMPARISON

CARBON FOOTPRINT (t CO₂ q./t polymer)



(1) LCA STUDY CONDUCTED BY E4TECH & LCA WORKS (FROM CRADLE TO BRASKEM FACTORY GATE)

(2) PLASTICS EUROPE



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