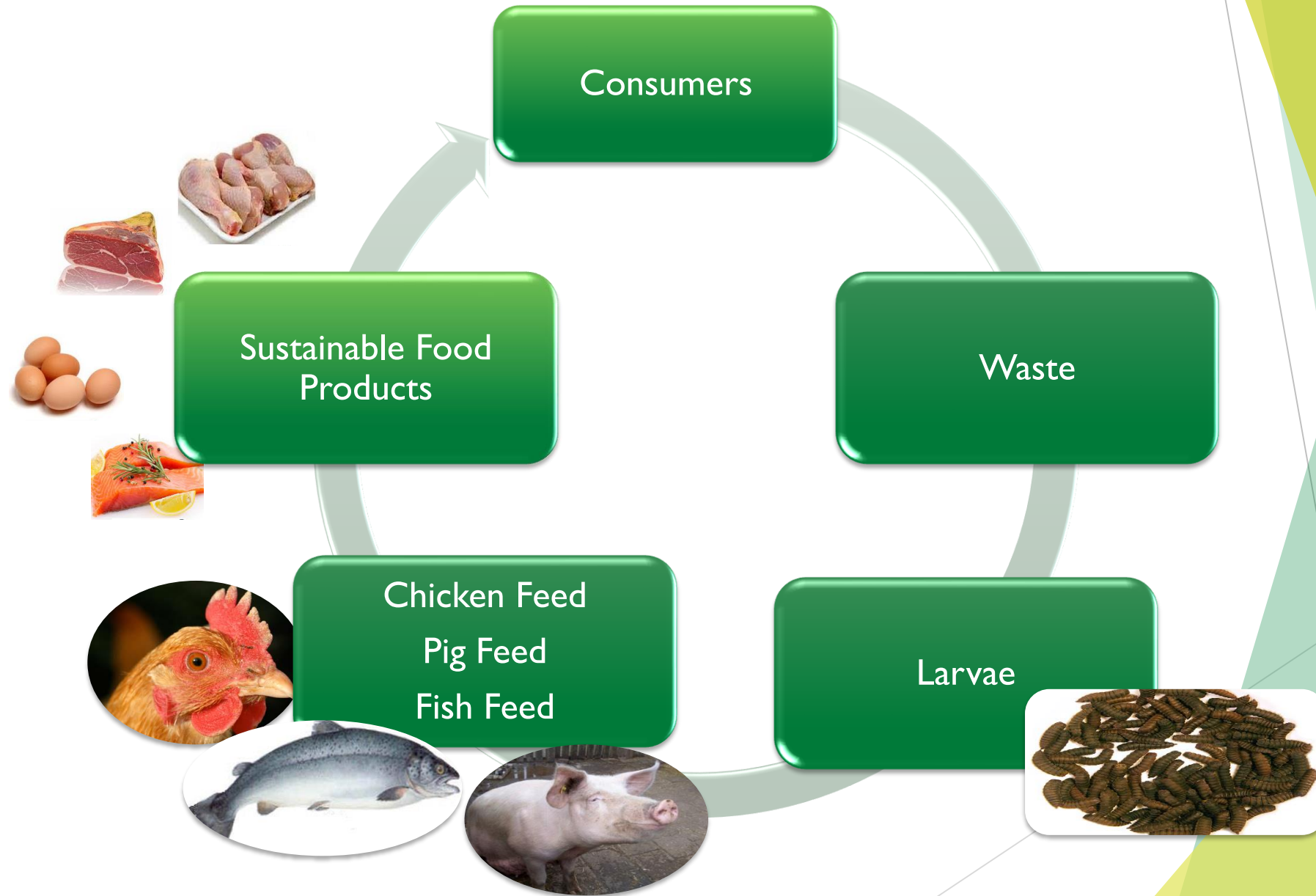


Biochar

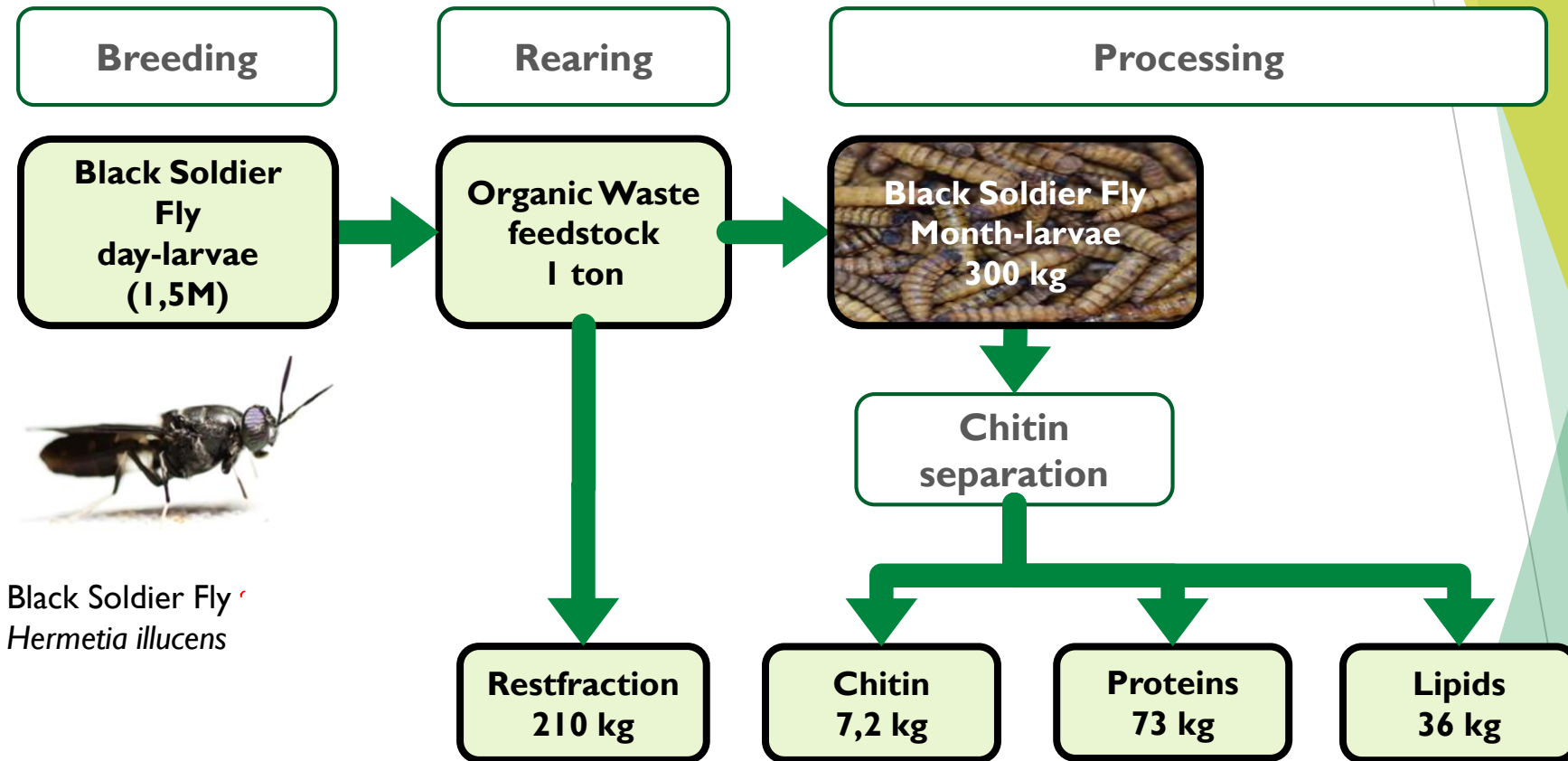
**Pyrolysis of frass
to make Insect bioconversion
a Negative Emission Technology**



Insect Bioconversion: a new circular industry



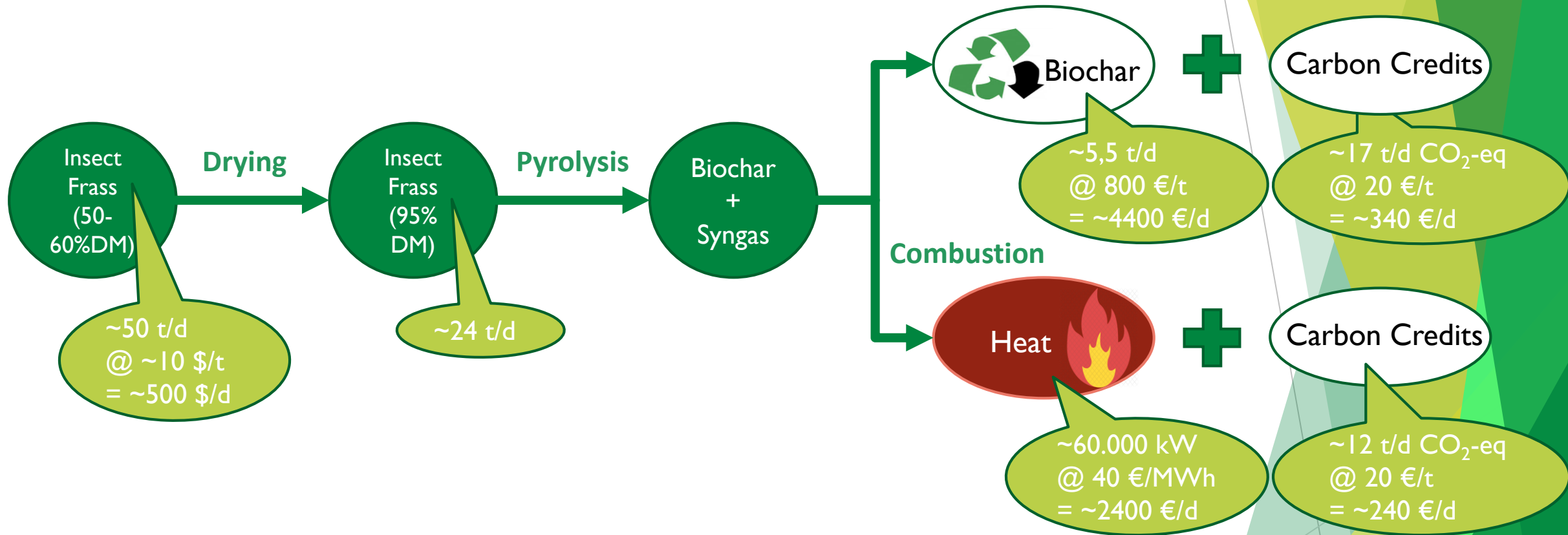
The process



Black Soldier Fly
Hermetia illucens



Biochar: revenue



Revenue of ~ 7.400 €/d: biochar, heat, carbon credits

CAPEX/yEBITDA: 1,9

Biochar markets

Feed additive

- regulates the nutrient balance in the intestinal tract, increasing feed efficiency and slaughter weights
- binds toxins in the digestive system: animals remain healthy, veterinary costs are reduced.
- reduces litter moisture, improves feet health

Soil improver

- Improved storage capacity for water and nutrients.
- Activation of soil life.
- Lower nutrient and nitrate leaching into groundwater.
- Lower emissions of nitrous oxide or ammonia.
- Peat replacer in horticulture substrates

Activated Carbon

- surface area of up to 1000 m²/g
- Applications in drinking water filtration, air purification, groundwater remediation, etc
- global market of 2 million t/y

Industry

- Food : dye, preservatives
- Cosmetics: dye, adsorbant
- Automotive: cabin filters, airco, adsorbant, dye
- Electrical: semiconductors, batteries
- Construction: insulation and moisture buffer
- Metallurgy: reductant

Same market as all other ITG products

Climate impact

Every single factory sequesters ~20t of CO₂-eq per day

Sequestration (in soil) through biochar: ~6.300 t/y CO₂-eq (85% C-content; 3,67 ratio C/CO₂-eq)


- Locking down the equivalent of 60 million car kilometers (100g/km)

Carbon mitigation by substituting fossil fuel with renewables

- heat production from syngas: ~22.000 MWh/y
- natural gas (fossil) not burnt: ~2.500.000 m³ natural gas (8,8 kWh/m³ energy)
- CO₂-equivalent: ~4.500 t/y CO₂-eq
 - Equivalent to getting 15.000 average Belgian households off fossil gas

EU ETS (current price ~27 €/t CO₂-eq)

~300 k€/y

The background features abstract, overlapping geometric shapes in various shades of green and yellow, creating a modern, clean aesthetic. The shapes are primarily triangles and polygons, some with soft gradients.

Frass pyrolysis
makes
insect bioconversion a
Negative Emission Technology
that is
scalable and profitable,
and produces **feed and chemistry resources**
on an industrial scale

