



Sustainable thresholds for new System Ceramics technologies

Andrea Torlai, Product Manager System Ceramics

07/10/2022

How much energy is consumed today in the ceramic printing process?

One Digital printer has...

12
Bars

252
Printheads

258.048
Piezo-Actuators

...and works in these conditions...



40 meters
per minute



Printing 24/7



12 KW of
installed power

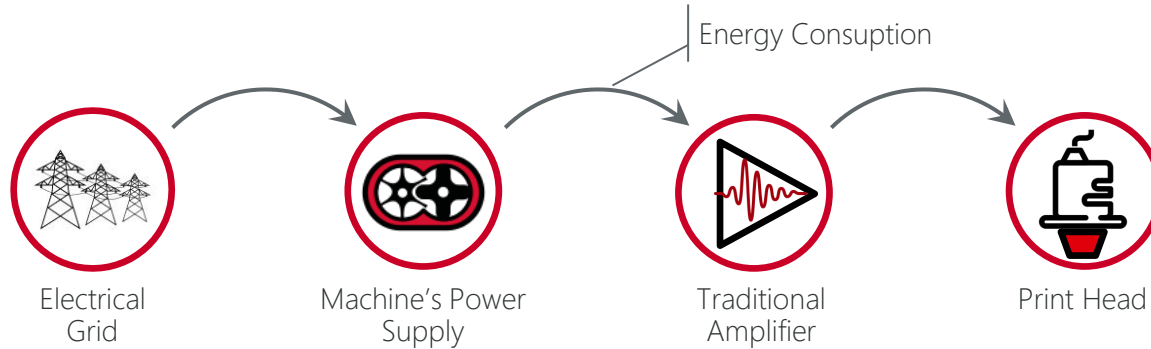
... bringing to this result



High energy
consumption

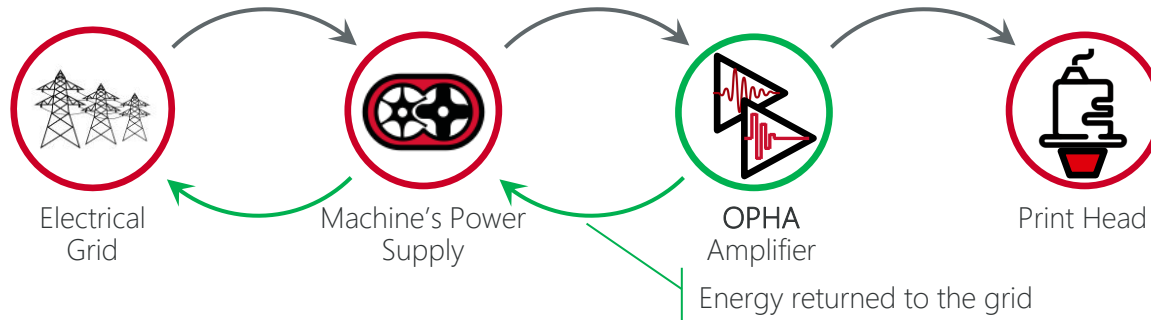
OPHA benefits vs. traditional process

BEFORE OPHA



- An inkjet printhead is a piezoelectric actuator and, at a first glance, it can be modelled as a capacitor
- To drive the actuator a linear power amplifier exchange power with the piezoelectric unit
- The energy exchanged between the amplifiers and the printhead, on a complete cycle, is dissipated as heat

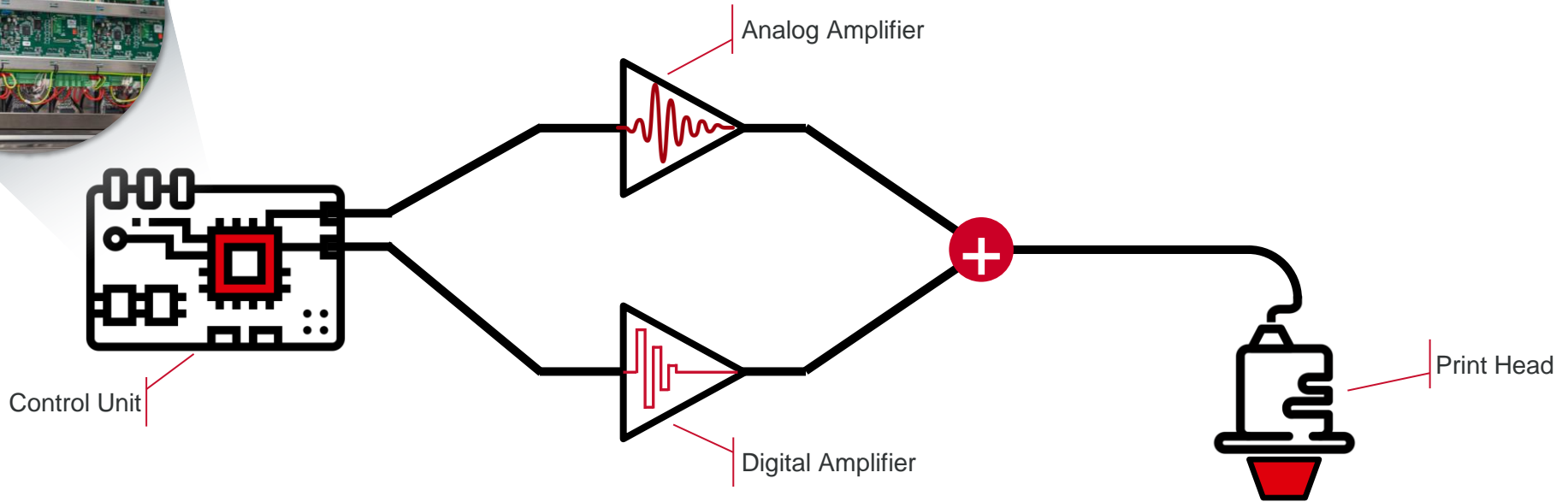
WITH OPHA



- Optimized Parallel Hybrid Amplifier is an innovative strategy patented by System Ceramics to drive printheads with hybrid technology.

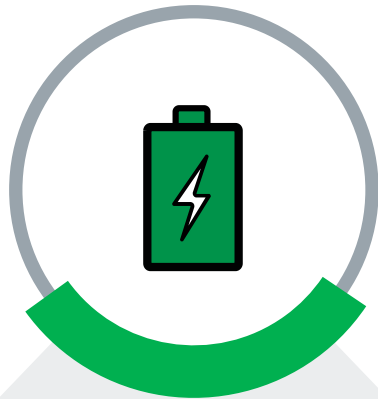
With OPHA: Energy used to drive the heads is recycled and put back into network

OPHA benefits vs. traditional process



Power saving OPHA vs Traditional Technology **up to 75%**

How can OPHA supports ceramics producers to be more sustainable?



Less Energy Consumption

Up to 75% less dissipated power in the machine

Less energy waste

Less installed power in the machine: lower impact on the environment



Less waste

OPHA requires less electronic components, reducing waste and spare parts needed



7 AFFORDABLE AND
CLEAN ENERGY



9 INDUSTRY, INNOVATION
AND INFRASTRUCTURE



12 RESPONSIBLE
CONSUMPTION
AND PRODUCTION



Thank you