

# MAGMA REINVENTS GLASS MAKING AND ENHANCES O-I'S CAPABILITIES

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**EXPAND RIGHT TO WIN** WITH RAPID COLOR, SHAPE & SIZE CHANGES

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**GROW WITH THE MARKET** WITH SCALABLE CAPACITY

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**ENTER NEW MARKETS** WITH SCALABILITY & LOWER CAPITAL

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**COST EFFICIENT** WITH MORE VARIABLE COST STRUCTURE

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**AGILE** THROUGH ECONOMIC CYCLES & SEASONALITY

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**LOWER CAPITAL INTENSITY** WITH EXTENDED ASSET LIFE

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**SUPPLY CHAIN EFFICIENT** WITH CO/NEAR LOCATION

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**CONVENIENT** PACKAGE WITH LOWER WEIGHT CONTAINER

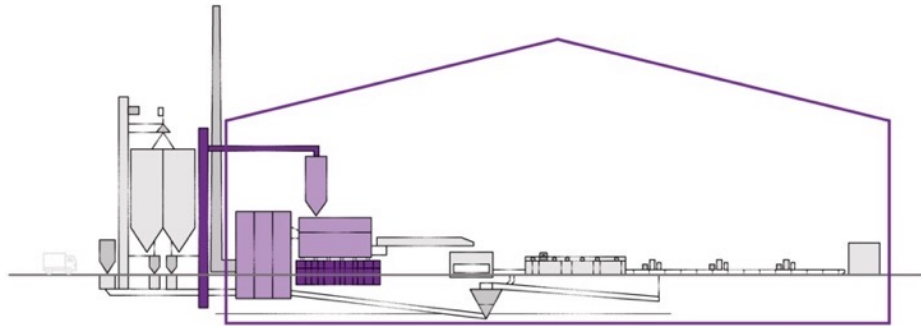
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**SUSTAINABLE** PRODUCTION WITH LOWER EMISSIONS

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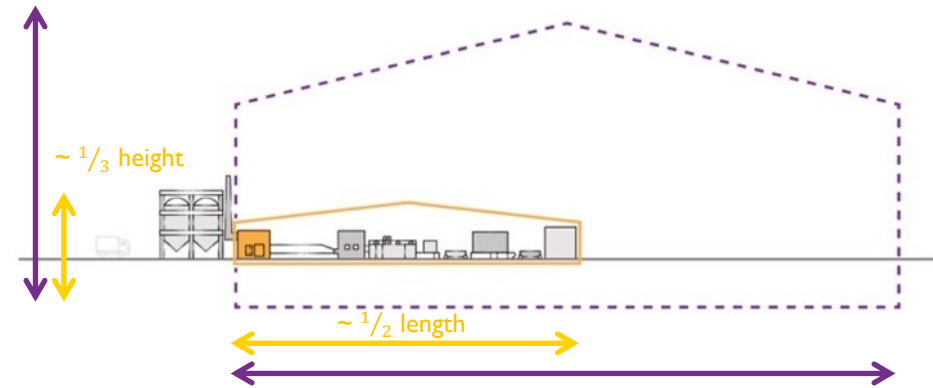
## HERITAGE

REQUIRES DEDICATED  
GLASS FACTORY

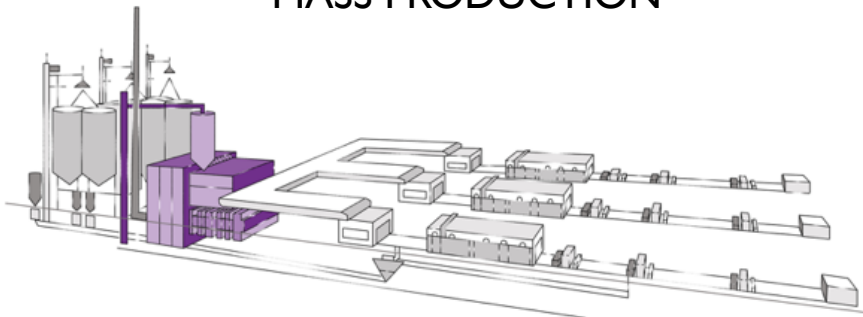


## MAGMA

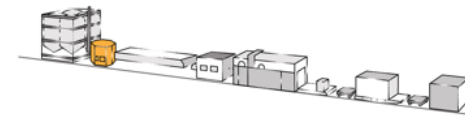
FITS WITHIN INDUSTRIAL  
WAREHOUSE



REQUIRES MULTI-LINE  
MASS PRODUCTION



ENABLES SINGLE-LINE  
NIMBLE SUPPLY CHAIN



*Illustrative representations of typical Heritage production lines & MAGMA Gen 3 production line*

# MAGMA DEVELOPMENT PROGRESSING VERY WELL

MAGMA is being developed across three generations with specific design principles.

## DESIGN PRINCIPLES

- 1 INVENT
- 2 SIMPLIFY
- 3 DIGITAL
- 4 MINIATURE
- 5 MODULAR
- 6 SUSTAINABLE

## DEVELOPMENT

**GEN 3** 2025+  
EXPANSION

- DIGITALIZE
- PREDICTIVE PROCESS
- ULTRA LIGHT WEIGHT
- RENEWABLE FUELS

**GEN 2** 2023+  
RETROFIT HERITAGE BASE  
EXPANSION

- MODULAR BATCH
- MODULAR FORMING
- MODULAR INSPECTION
- MODULAR COLD END

**GEN 1** 2022+  
RETROFIT HERITAGE BASE

- MODULAR MELTER





# MAGMA'S POTENTIAL BENEFITS

O-I expects MAGMA will significantly enhance O-I's capabilities and competitive position.

## OBJECTIVES

## MAGMA GEN 3<sup>1</sup> IMPROVEMENT VS HERITAGE (2025+)

1. FLEXIBLE



Achieve attractive economics at 15% lower utilization rate

2. SCALABLE



New melter reduces capacity per line to 25-50% of heritage

3. RAPID DEPLOYMENT



Reduce deployment time by up to 50%

4. SUPPLY CHAIN EFFICIENT



Reduce shipping distances by 30-80%

5. COST COMPETITIVE



Reduce cost gap with competing substrates by 50-75%

6. LOWER CAPITAL INTENSITY



Reduce capital intensity up to 40%

7. CONVENIENT



Reduce product weight<sup>1</sup> up to 30%

8. SUSTAINABLE



Reduce GHG emissions by up to 95%

**INVESTMENT  
CRITERIA**

**CAPITAL ALLOCATION TO  
ACHIEVE TARGETED RETURNS**

**EXPANSION SUBSTANTIALY SUPPORTED  
BY CUSTOMER AGREEMENTS**



<sup>1</sup> With ULTRA light weighting  
Source: Internal analysis





# MAGMA IN ACTION



**MAGMA**  
MODULAR ADVANCED GLASS MANUFACTURING ASSET

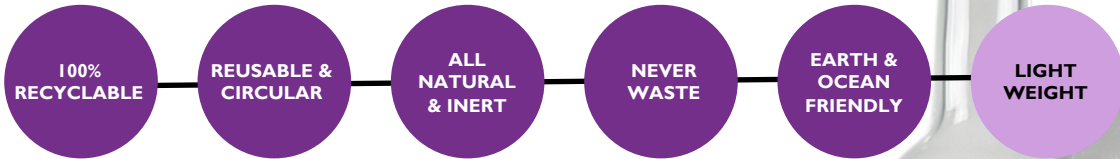
*Illustrative pictures of the MAGMA system in Holzminden, Germany*



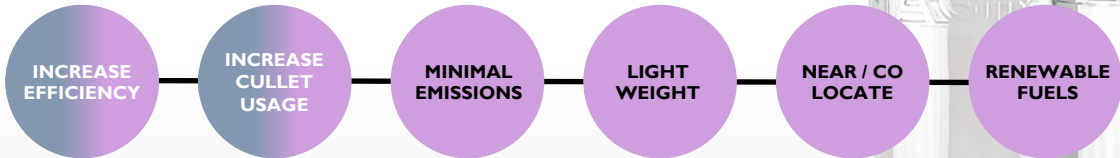
# MAGMA TO IMPROVE SUSTAINABILITY

## IMPROVING SUSTAINABILITY OF PRODUCT AND PROCESS

### SUSTAINABILITY OF GLASS CONTAINERS



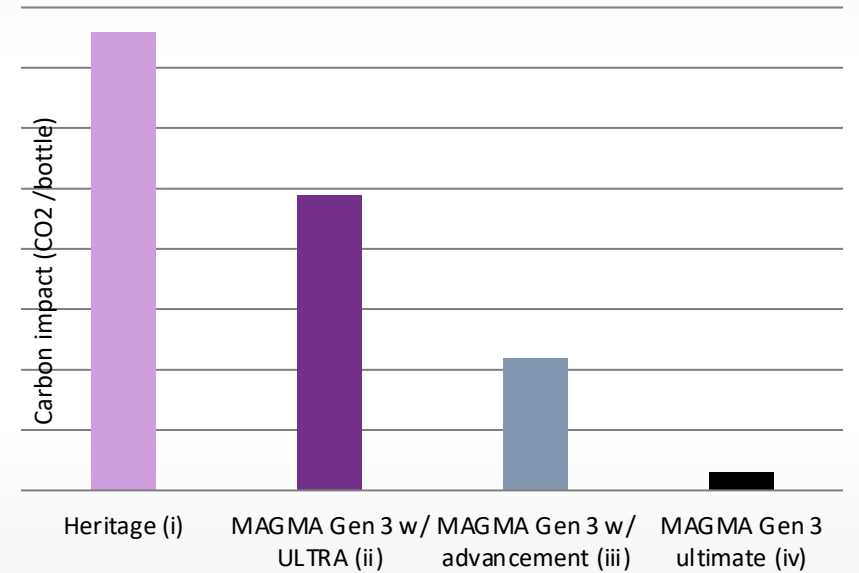
### SUSTAINABILITY OF GLASS CONTAINER MANUFACTURING



- Current favorable attribute
- Improve by breakthrough systems (MAGMA / ULTRA)
- Improve by heritage technology or other initiatives



## POTENTIAL CARBON IMPACT OF MAGMA VS. HERITAGE



Illustrative representation of carbon impact per bottle (g CO2 /unit)

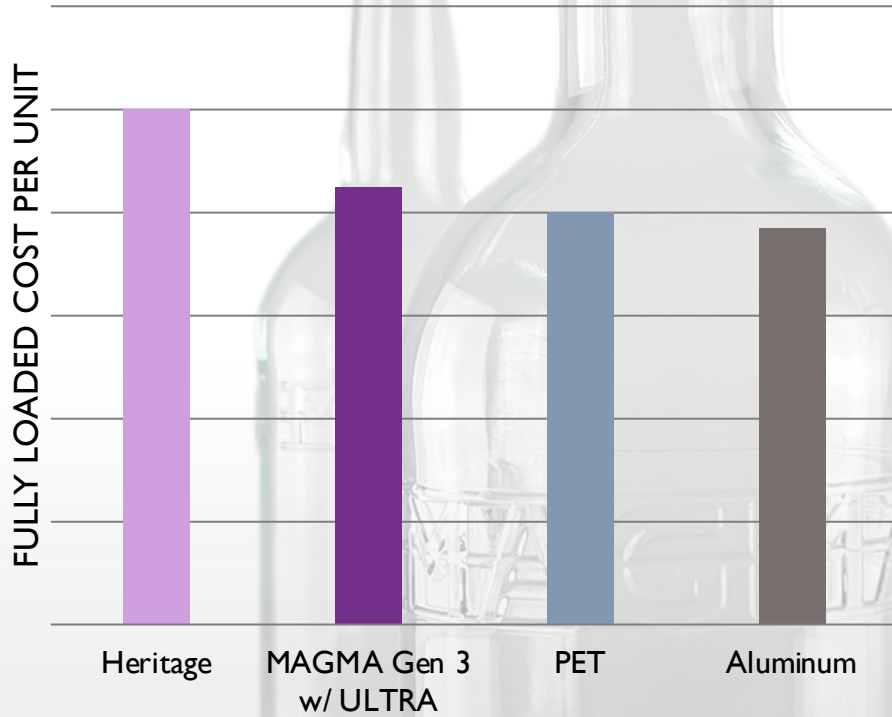
- (i) oxygen-fuel furnace, ~ 35% recycled content;
- (ii) ~ 55% recycled content;
- (iii) with co-location and ~ 95% recycled content;
- (iv) with renewable energy

Source: Internal analysis supported by third-party analysis

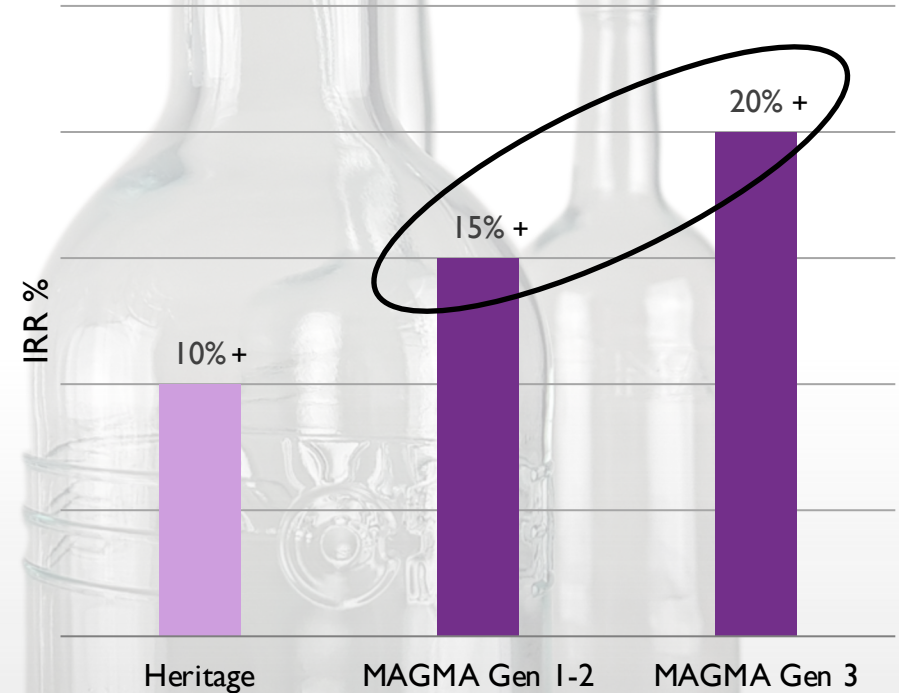


MAGMA can substantially close the price gap with alternative substrates and boost returns.

## COST COMPARISON



## EXPANSION HURDLE RATES (IRR)



Say "YES" to more growth opportunities



# IMPROVING O-I'S RIGHT TO WIN

MAGMA expands O-I's right to win in its addressable market.

## HOW WE WILL WIN

- Faster speed to market
- Faster capital deployment for growth
- Shorter product development cycle & launch
- Logistics improvement
- Shorter production runs

## EXAMPLES

- Still/sparkling wine
- Whiskey
- Premium+ spirits
- Spirit based RTD
- RTD tea
- Spices/table sauces



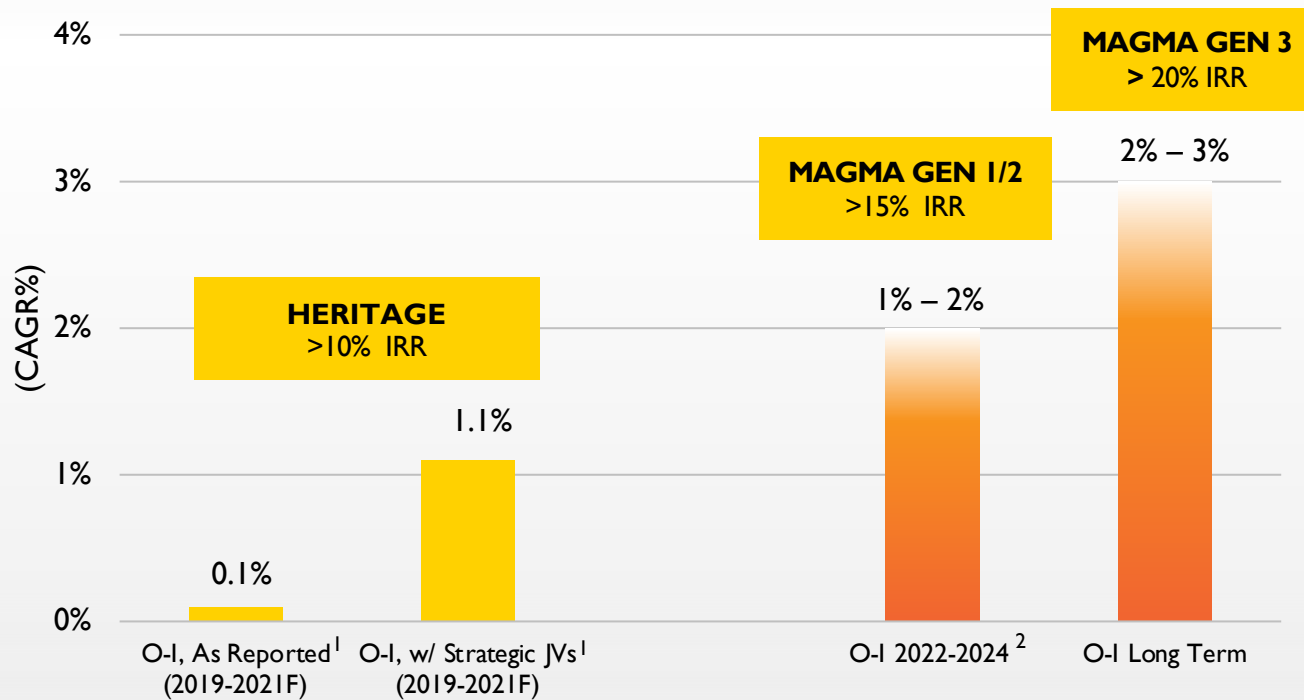




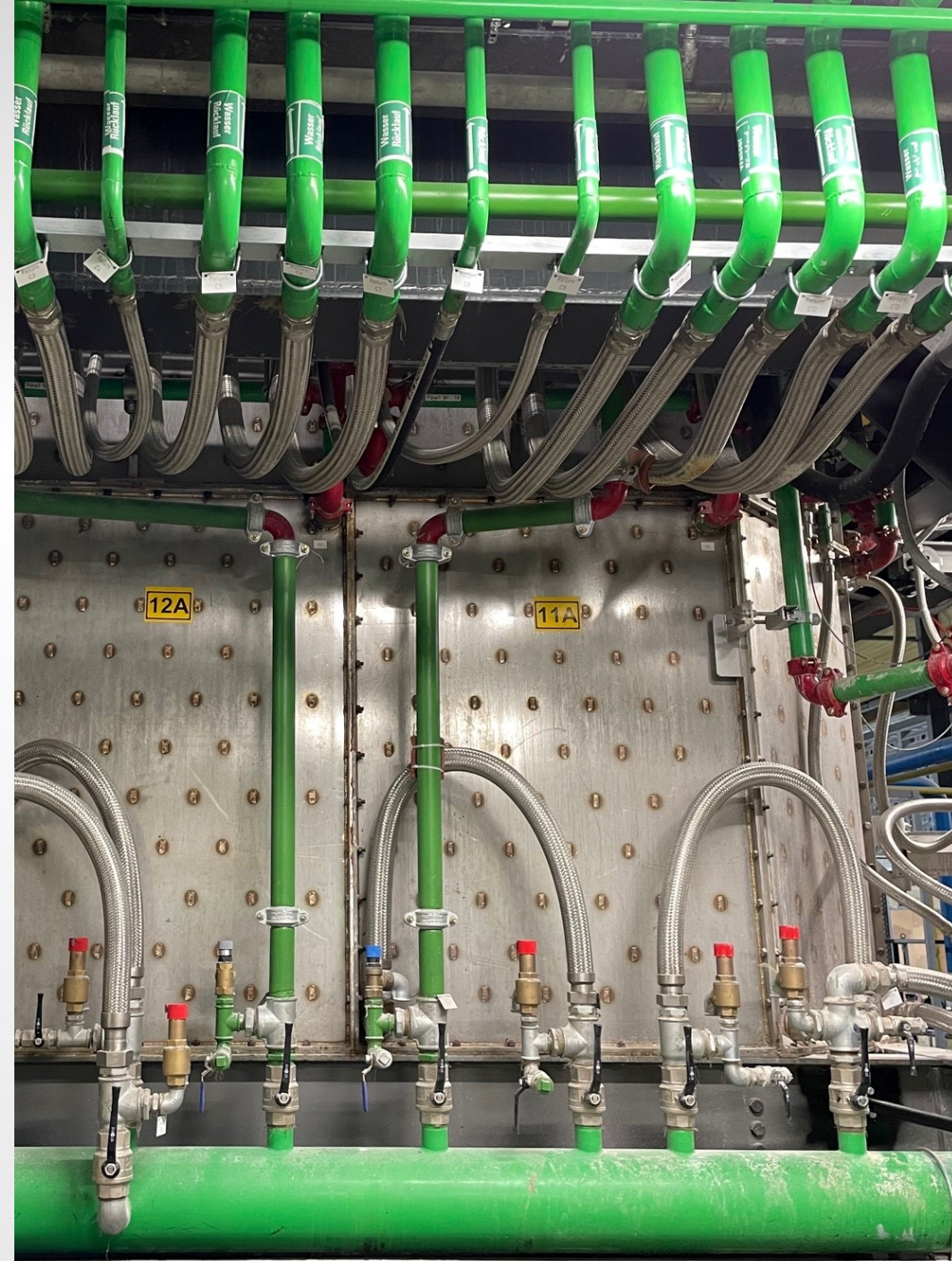
# MAGMA ENABLES SUSTAINABLE GROWTH

MAGMA will enable above market average growth long-term.

## ENABLING SUSTAINABLE PROFITABLE GROWTH



<sup>1</sup> 2019-2021F adjusted for divestitures  
<sup>2</sup> 2022-2024 gross of divestitures



# YES! TO A NEW PARADIGM FOR GLASS

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MAGMA IS A UNIQUE COMPETITIVE EDGE:

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MAGMA IS AN **O-I INNOVATION** –  
>100 PATENTS/APPLICATIONS WORLDWIDE

MAGMA UNIQUELY **ALIGNS O-I TO  
EVOLVING MARKET REQUIREMENTS**

MAGMA IS MORE COST EFFICIENT WITH  
LOWER CAPITAL INTENSITY SO O-I CAN  
**SAY 'YES' TO PROFITABLE GROWTH**

MAGMA CAN UNIQUELY **ENHANCE  
O-I'S SUPPLY CHAIN**

MAGMA MAKES **O-I GLASS MORE  
SUSTAINABLE** VS COMPETITION

