



# FINNO EXERGY

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## SOLVING THE GREEN TRANSITION CHALLENGES WITH A UNIQUE INNOVATION

- Cutting 20% of the gas costs of gas turbine operators**
- Cutting 20% of CO<sub>2</sub> emissions of gas turbine operators**
- Enabling use of mixed gases in gas turbines**
- Enabling use of green hydrogen**



# **BREAKTHROUGH COMBUSTION TECH FOR GAS TURBINES**

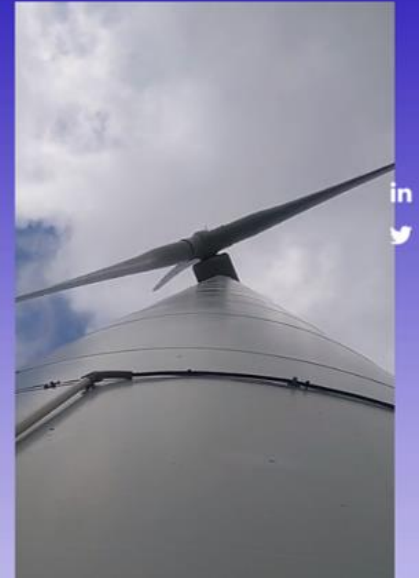
AVIATION



MARINE



POWER GENERATION



# **FINNO EXERGY**

# FINNO EXERGY IN A NUTSHELL

**DEVELOPED A REVOLUTIONISING TECHNOLOGY FOR ANY KIND OF GAS TURBINE, ENERGY PRODUCTION, AVIATION AND MARINE**

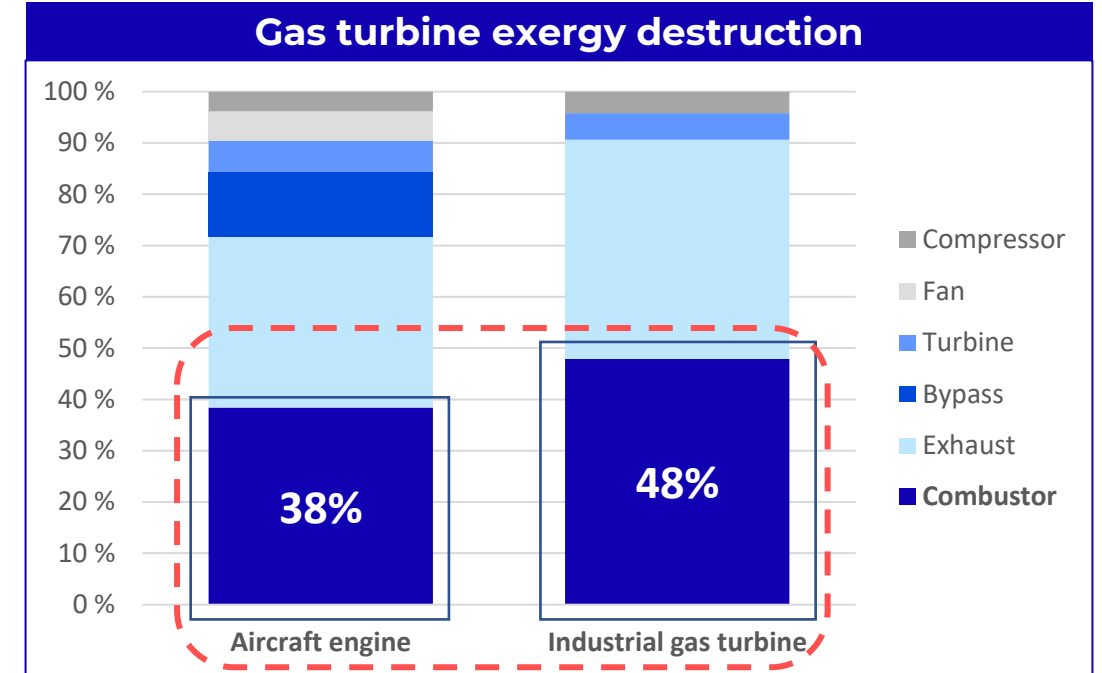
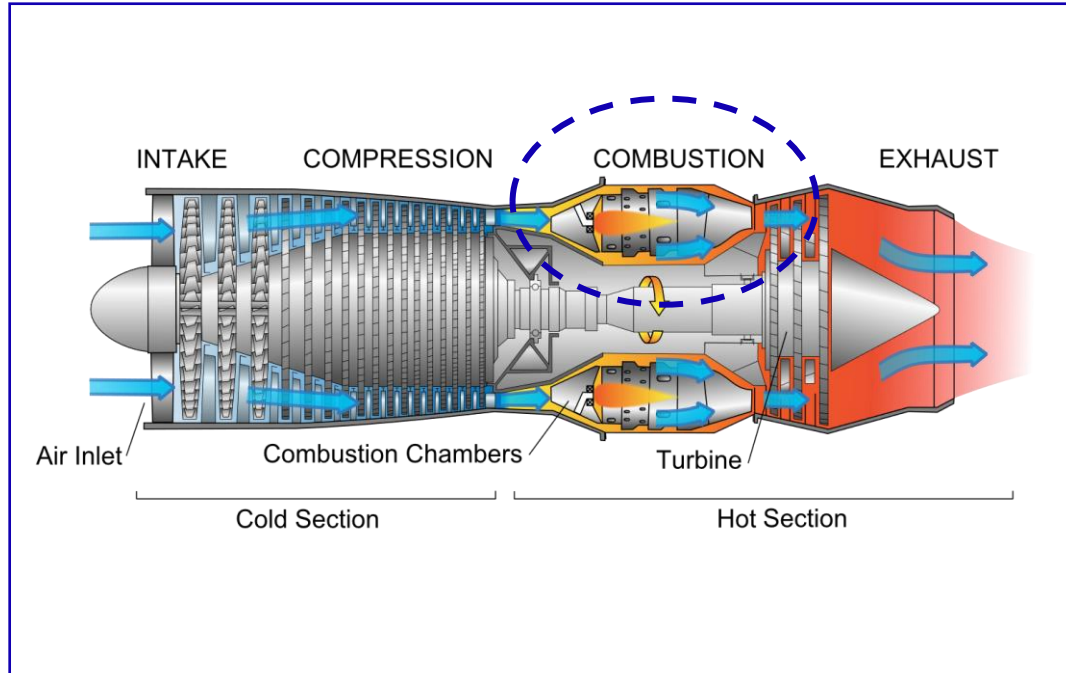
## **BENEFITS OF THE TECHNOLOGY**

- 1. FUEL CONSUMPTION REDUCTION -20%**
- 2. REDUCTION OF CO<sub>2</sub> EMISSIONS -20%**
- 3. REALTIME FUEL FLEXIBILITY ENABLES HYDROGEN USE WITH 0-100% MIXTURES OF NATURAL GAS**

- HUGE TARGET MARKET + 120B€**
- MARKET ENTRY IN 2023**
- REVENUE + 200M€ IN 10 YEARS**



# TRADITIONAL GAS TURBINE COMBUSTION IS AT ITS PEAK



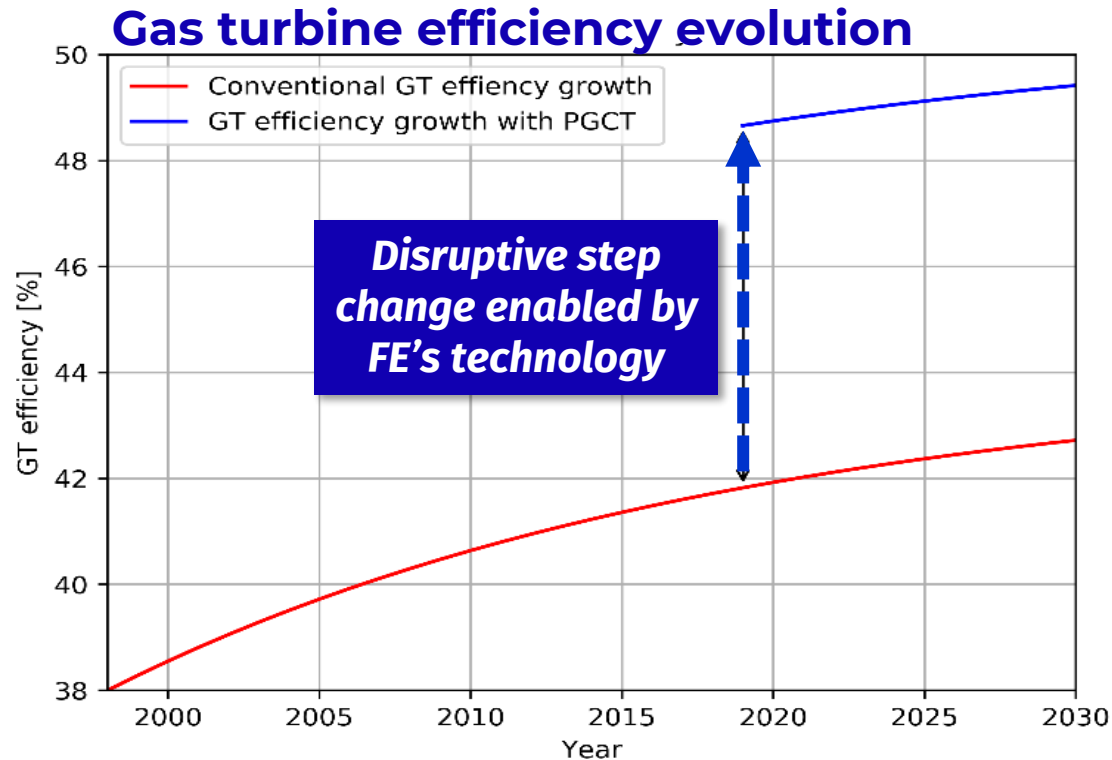
## Traditional efficiency improvement

- Rising compressor pressure ratio
- Rising turbine inlet temperature

## Challenges

- Low efficiency and slow development
- Flexibility to handle different mixtures of hydrogen and natural gas with same hardware

# FINNO EXERGY'S SOLUTION PROVIDES A **STEP CHANGE**



## How it is done

- Pulsating combustion system
- Utilises the same amount of fuel
- Results in a pressure increase of the hot gases entering the turbine
- Due to the higher-pressure ratio on the turbine
- More work can be extracted per unit of fuel burned
- **HIGHER SYSTEM THERMAL EFFICIENCY**

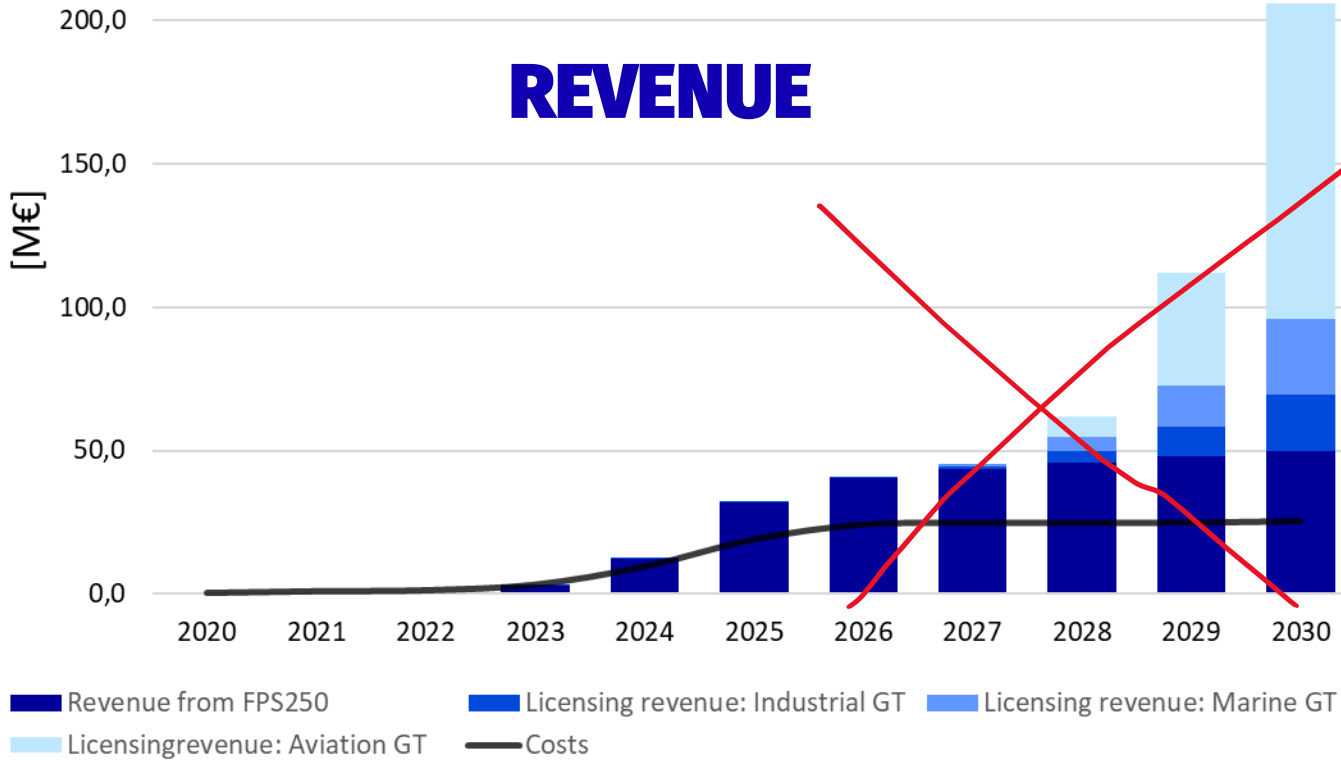
## Step change in gas turbine efficiency equals:

- Yearly fuel saving worth of billions of €
- CO<sub>2</sub> emission reduction equivalent to hundreds of millions of cars of the road

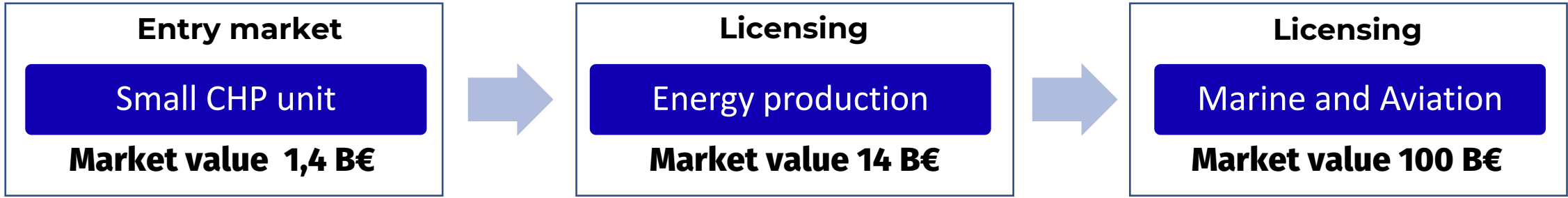
## Real time fuel flexibility:

- Solution to meet CO<sub>2</sub> emission targets
- Hydrogen economy enabler
- Full fuel flexibility without hardware changes

# BUSINESS MODEL AND LONG-TERM VISION



# BUSINESS MODEL AND LONG-TERM VISION



## Budget and personnel 2023–2027

1,000 k€	2022	2023	2024	2025	2026	2027
Revenue	400	3,200	9,800	39,000	76,000	132,000
Sold units, pcs		10	30	62	86	112
Sold tech projects/units		1/10	3/30	7/62	10/86	14/112
Total costs	-1,200	-5,500	-9,600	-19,000	-29,000	-43,000
EBITDA	-800	-2,300	200	20,000	47,000	89,000
Personnel	4	15	21	26	37	51



One Boeing 747 could save yearly:

- 9 000 000 litres of fuel
- 3 860 000 € savings
- 22 400 tons of CO<sub>2</sub> = 10000 cars off the road



## SUMMARY

- **Only one in the world** to make PGC work
  - Huge savings in money and emissions
  - Huge market potential **+ 120 B€**
  - **+ 200 M€** revenue in 10 years
  - Market entry in 2 years with unique CHP unit
  - Hydrogen economy enabler
  - Forest industry side stream utilization
  - Ranked to **TOP5** in the Shell New Energy Challenge
  - World leading aviation companies as partners : **AIRBUS, SAFRAN**
  - Talented and hungry team to make the company fly!
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# THANK YOU



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