

MATCH YOUR FUTURE

26 OTT
2023



BRAVO INNOVATION HUB



HYP**ER **WIND

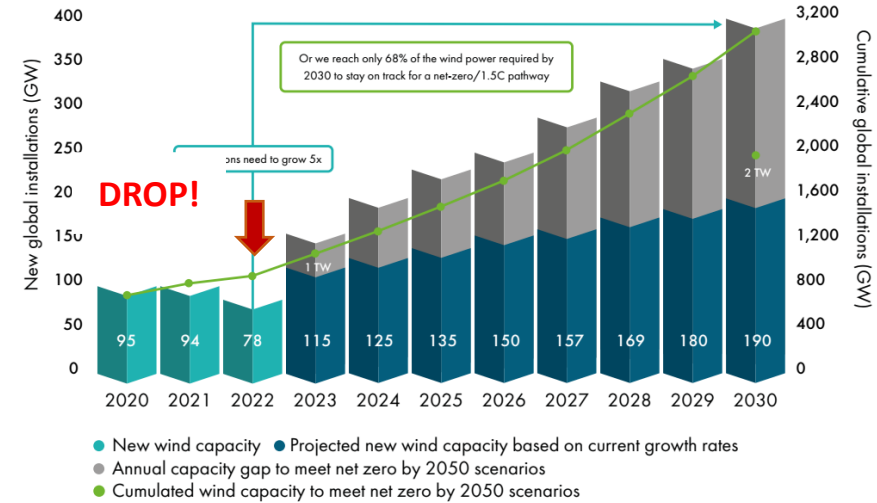
*Reducing the cost of wind energy
for a sustainable future*



WHAT IS THE PROBLEM?

Cost to produce energy from wind is too high.

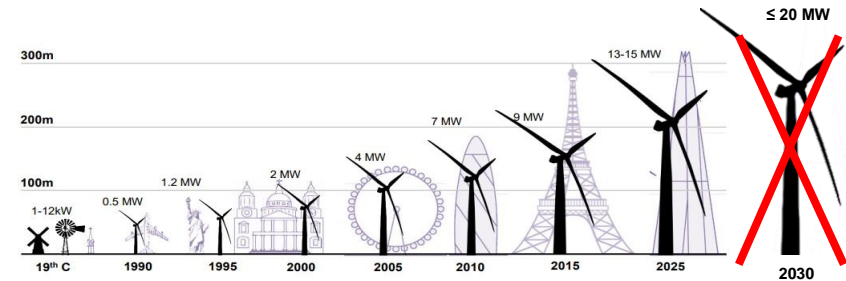
Energy producers don't order new turbines and OEMs suffer from lower sales and extremely narrow margins



S&P Global
Market Intelligence

Race for ever-larger wind turbines might be unsustainable

The push for ever-larger turbines has long been rooted in an industrywide desire to improve offshore wind's levelized cost of energy.





THE SOLUTION

How do we reduce the Levelized Cost of Energy?

CAPEX + OPEX + financials
of a wind farm

Fattura n. 502310130825 *
del 06 OTTOBRE 2023
periodo di riferimento
01 AGOSTO 2023 - 30 SETTEMBRE 2023

Fattura di Conguaglio

Documento non valido ai fini IVA - copia analogica di fattura elettronica inviata al SDI e resa disponibile nei canali previsti dall'Agenzia delle Entrate.
* numero fattura elettronica valida ai fini fiscali

MODALITA' DI PAGAMENTO

Il pagamento potrà avvenire utilizzando l'APP IrenYou mediante il servizio di pagamento IrenPay. Per le altre modalità consulta la sezione "Come pagare la bolletta"
La invitiamo a visionare la sua posizione contabile nella sezione "Comunicazione ai clienti". Ci risultano da pagare precedenti bollette per un importo pari a 186,99€.

I miei dati

Cliente IACCARINO ROBERTA
Cod. Fiscale/P.IVA CRRRTG4E66F839A

Il mio contratto

Tipologia DOMESTICO RESIDENTE
Offerta IREN REVOLUTION LUCE VERDE
Codice Offerta 000208ESFML05XX0001EDOIRLX220119
Data decorrenza offerta 04/01/2022



Ripartizione voci di spesa



Riepilogo voci di spesa (Consulta il Glossario ARERA)

Spesa per la materia energia	295,81
Spesa per il trasporto e la gestione del contatore	33,93
Bonus sociale	-33,46
Spesa per oneri di sistema	46,17
Imposte	36,32
Totale imponibile	378,77
Iva agevolata 10%	37,88
Totale bolletta	416,65
Canone di abbonamento alla televisione per uso privato (escluso IVA art. 15 cm 3 DPR 663/1972)	18,00
Totale	434,65

$$LCOE (\text{€/kWh}) = \frac{\text{Total cost of ownership}}{\text{Energy produced}}$$

We increase the energy produced to bring LCOE down!



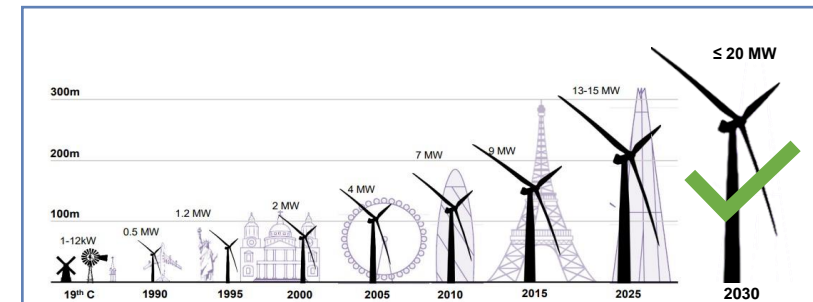
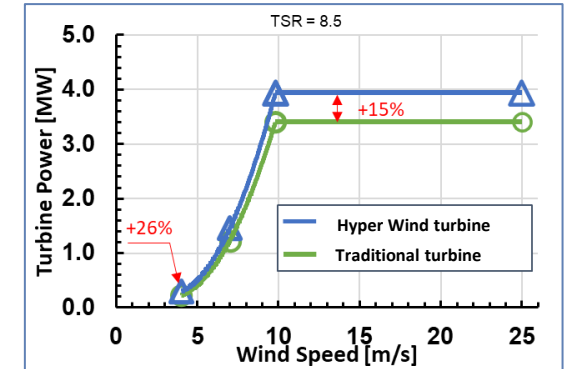
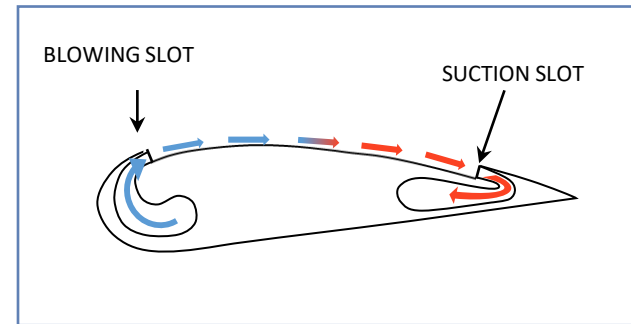


THE SOLUTION

How do we reduce the Levelized Cost of Energy?

Active flow control on the blades

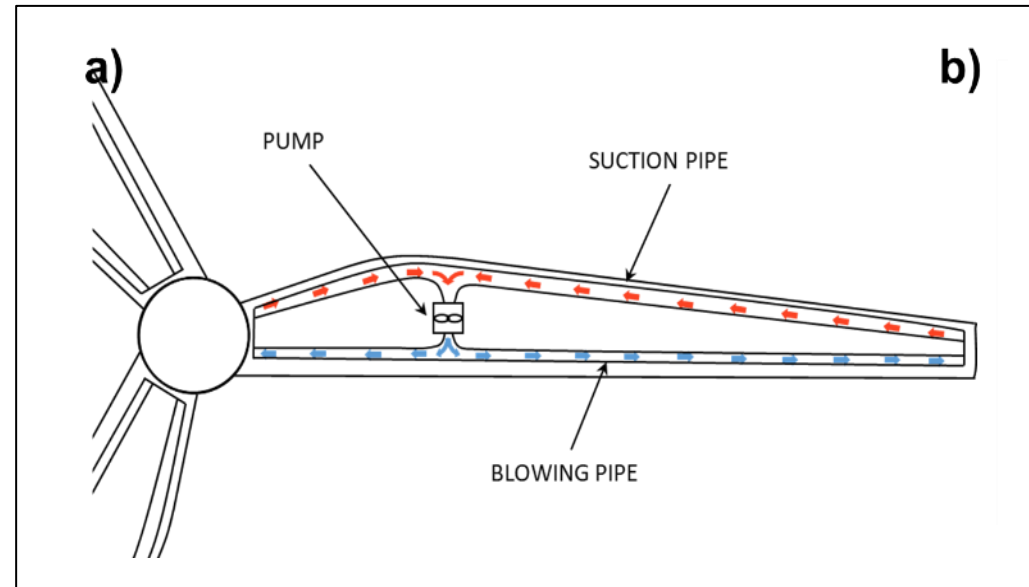
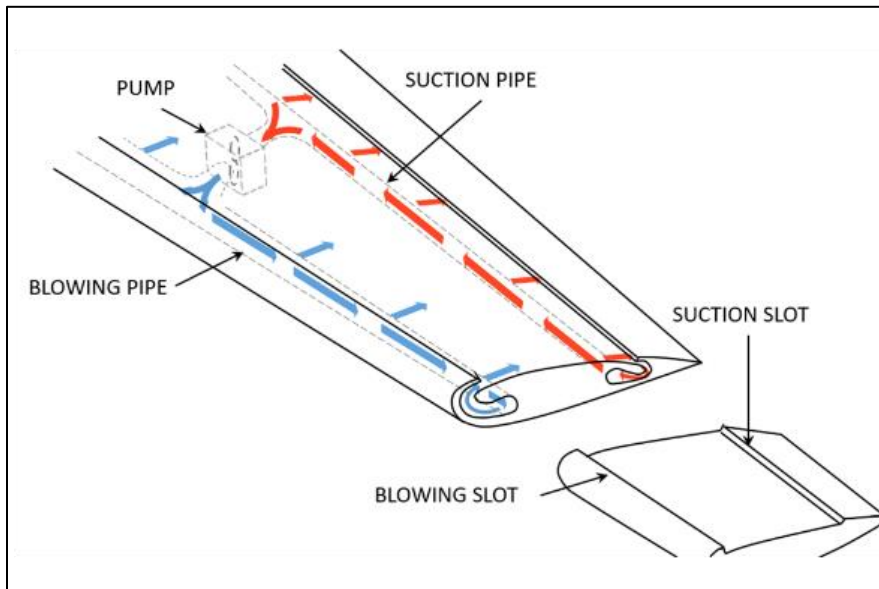
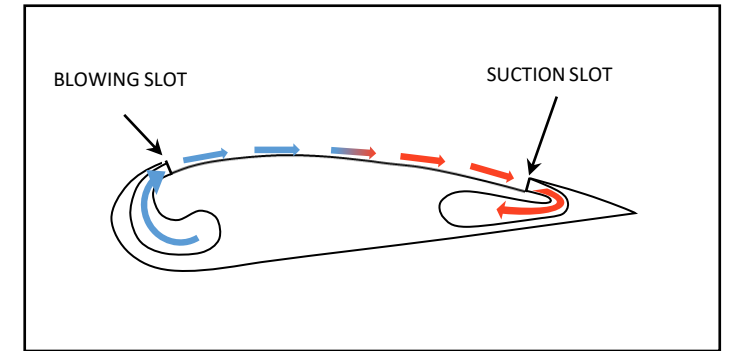
- ✓ More power at all wind speeds (+15%)
- ✓ Reduction of Levelized Cost of Energy (-10%)
- ✓ Enabling larger wind turbine rotors
- ✓ International patent **GRANTED**



THE TECHNOLOGY

How do we reduce the Levelized Cost of Energy?

Hyper Wind turbines mount an innovative Active Flow Control (AFC) system that combines suction and blowing on the surface of the blade

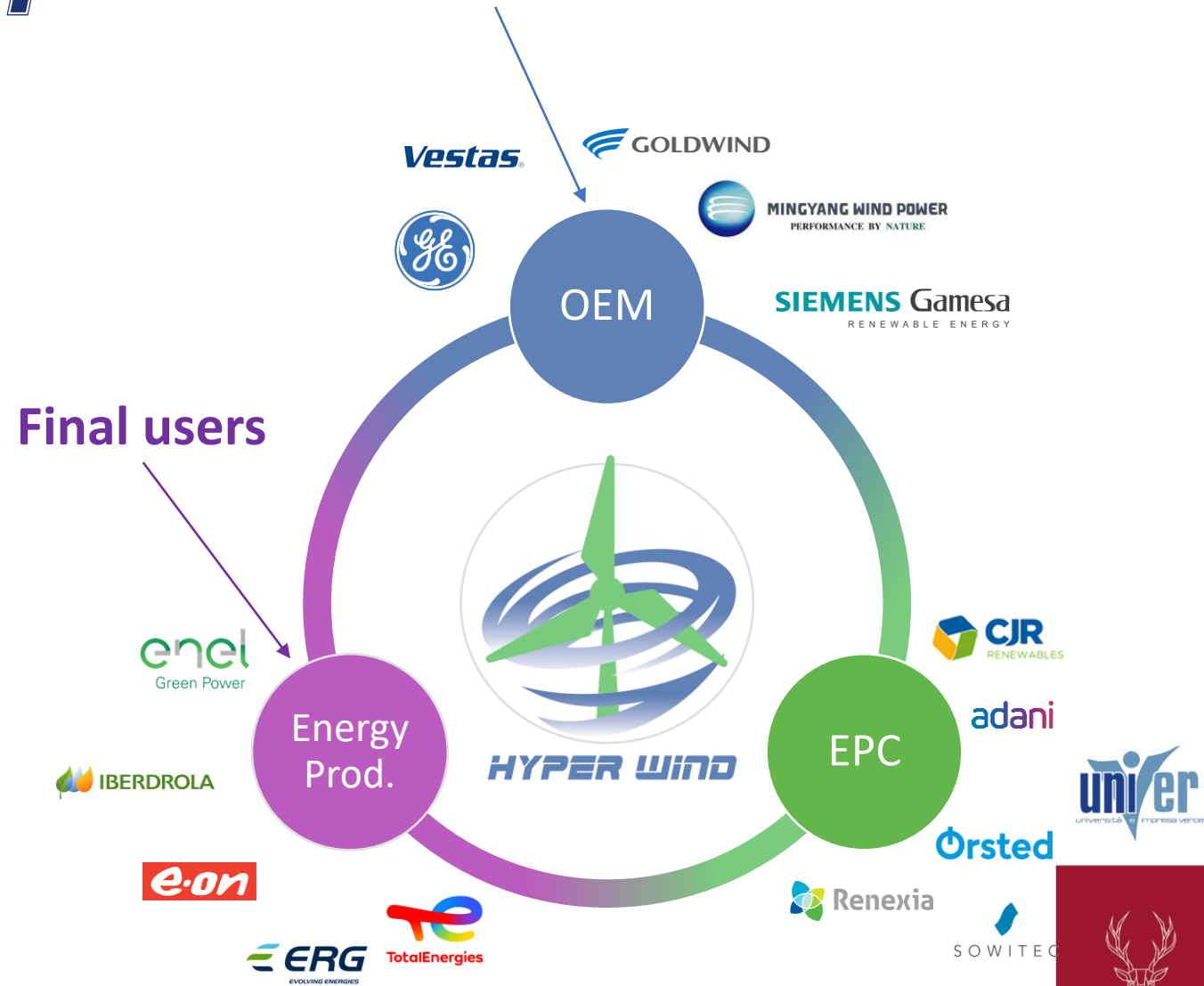


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THE MARKET

TAM	New installed capacity:	
	130 \$ Bln (+13%/year)	
SAM	Market share with 2 OEMs	
	26 \$ Bln	
SOM	Royalties	
	2027	2033
	7.8 \$ Mln	70 \$ Mln

Our Customers!





EARLY ADOPTERS

➤ Co-creation

- ☐ Top 20 Global OEM, Energy producers, Project companies

NDA signed
with top 10
OEM ✓



➤ Reblading

- ☐ Lower financial risk
- ☐ Quicker installations



Example of player active in reblading:



Home / La nostra energia / Vento / Reblading, un progetto di innovazione tecnologica

Reblading, un progetto di innovazione tecnologica



ROADMAP

MATCH
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FUTURE

26 OTT
2023

2025

Build demonstrator

2026
TRL 7

Demonstrator
tested

2026

Commercial
agreement
with OEM

2024
TRL 4

Technology
validated in wind
tunnel

Rotor optimization
(DTU)

2024

2023
TRL 3

Brevetti+ by
Invitalia (120k€)

2023

BRAVO Innovation Hub
Accelerator (20k€)





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WHAT DO WE NEED

Financial needs

2024

	R&D	
	HR	200 k€
	Ext	230 k€
	IP Legal	50 k€
	Mkt	20 k€
		500 k€

2025 - 2026

	R&D	
	HR	1000 k€
	Ext	1800 k€
	IP Legal Corp	150 k€
	Mkt	50 k€
		3000 k€

WHAT DO WE NEED?

Build a prototype and a demonstrator



**Prototype 1.5 m for wind
tunnel testing and field testing**



Demonstrator 30 m for field testing



WHAT DO WE NEED?

Build a prototype and a demonstrator



Prototype 1.5 m for wind tunnel testing and field testing

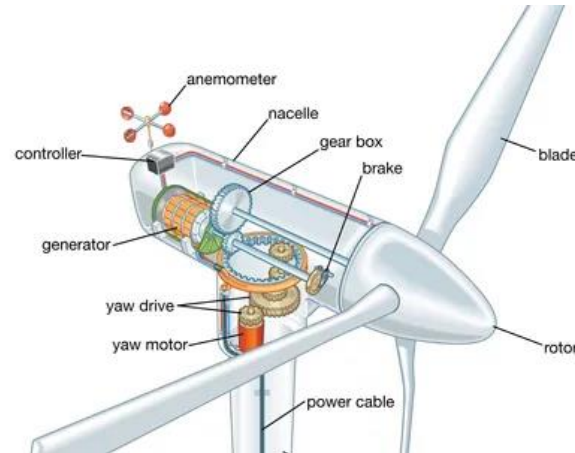
- **Stampa 3D plastica e metallo**
- **Lavorazioni Meccaniche di precisione**
- **Sensoristica**
- **Generatori elettrici**

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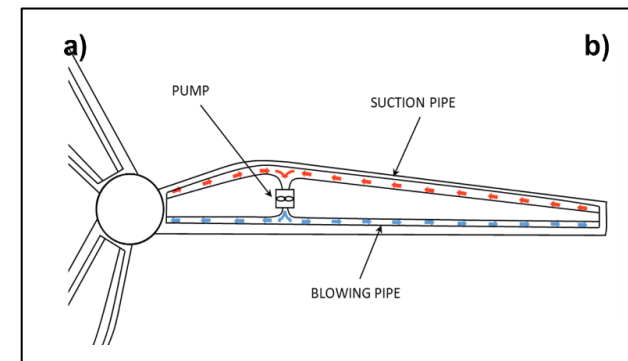
WHAT DO WE NEED?

Build a prototype and a demonstrator



- Co-creazione con produttore turbine e produttore energia
- Turbina eolica in dismissione
- Terreno per la campagna di test
- Prototipazione pala eolica
- Ventilatore radiale per l'AFC
- Tecnici, operai

Demonstrator 30 m for field testing



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THANKS!

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