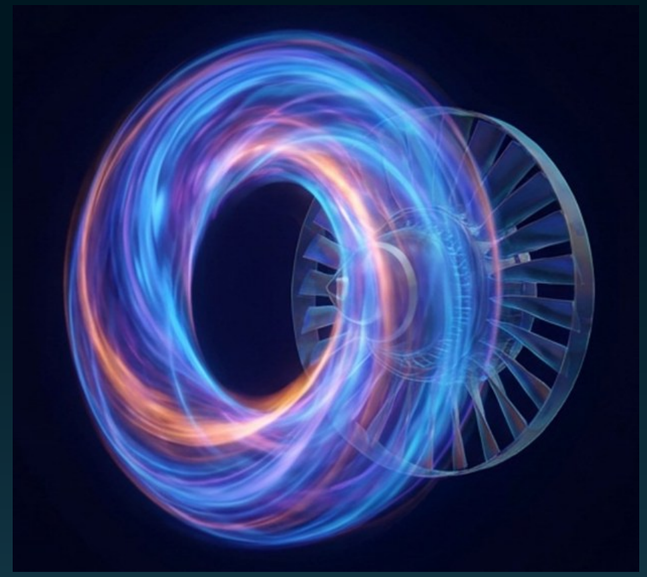
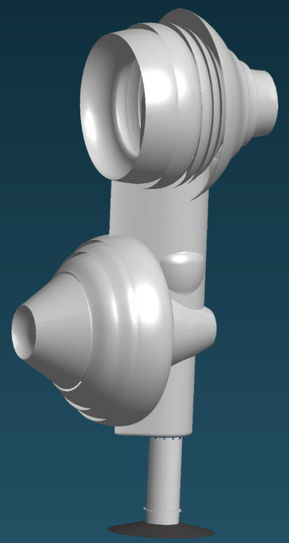
MODM LIMITED (HK)

Next-Generation Wind Technology Designed for Scalable Deployment

ONSHORE / OFFSHORE



IDEAS THAT INSPIRE



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DWTurbine

www.DWTurbine.com

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In This Pack

1. Global Wind Market
2. Problems With Existing Technology
3. Our Solution
4. How Are We Different
5. Competition
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7. Why Now
8. Business and Licensing Economic Model
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APPENDIX 1
Technology in Detail

APPENDIX 2
Phase 1 Funding. Detailed Expense Allocation

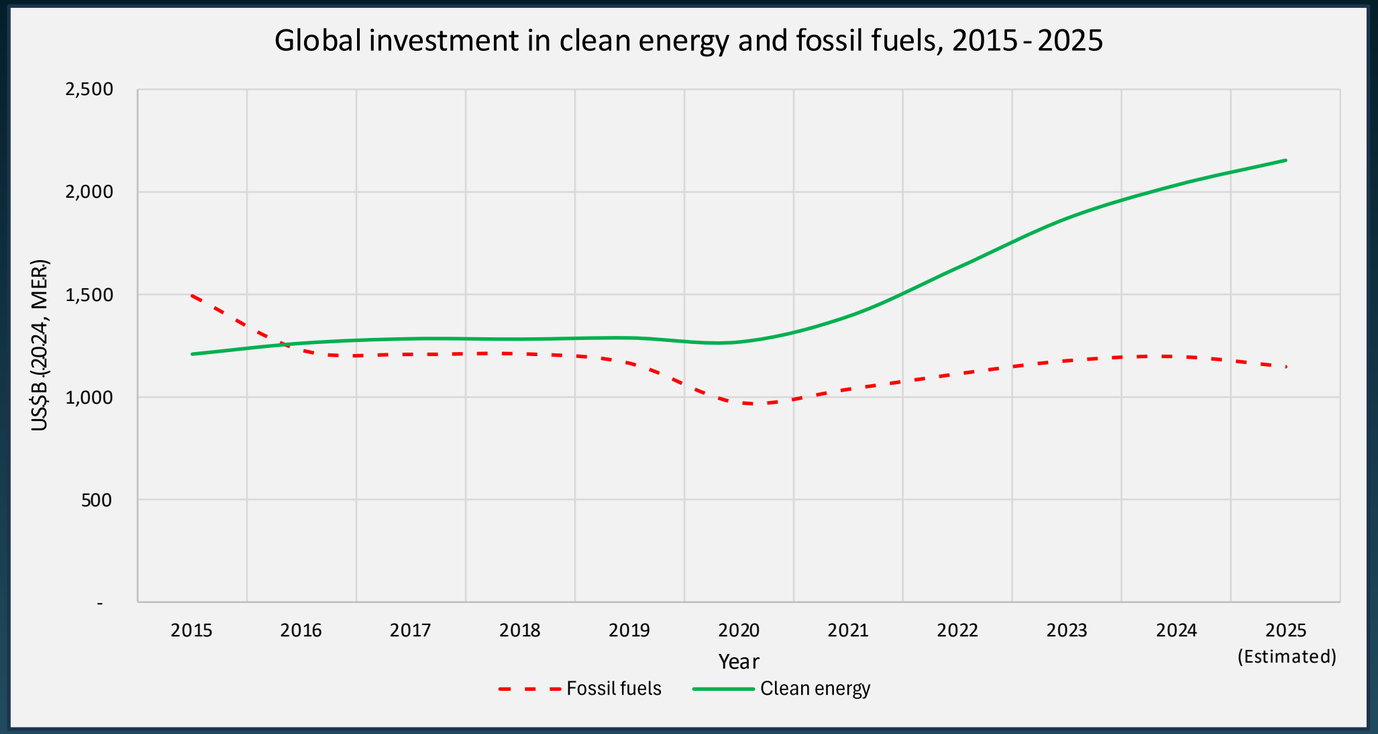
APPENDIX 3
Technology Readiness Level (TRL) Details

APPENDIX 4
Applications and Use Cases

Global Wind Market

The global wind turbine market was valued at USD 170.9 billion in 2025 and is estimated to grow at a CAGR of 7.3% from 2026 to 2034.

(Global Market Insights Inc. 2025)



IEA. Licence: CC BY 4.0
https://www.iea.org/data-and-statistics/charts/global-investment-in-clean-energy-and-fossil-fuels-2015-2025

Drivers for Our Technology

1. Market Demand Growth
2. Displaces Old Costly Technology
3. Optimisation for Large Wind Farms

Competing Technology: HAWT Challenges

Large external rotating turbine blades (HAWT)



Retrieved from Coherence
<https://coherence.com.au/curlew/2022/08/zero-emissions-hasten-nuclear/>

Structural Challenges

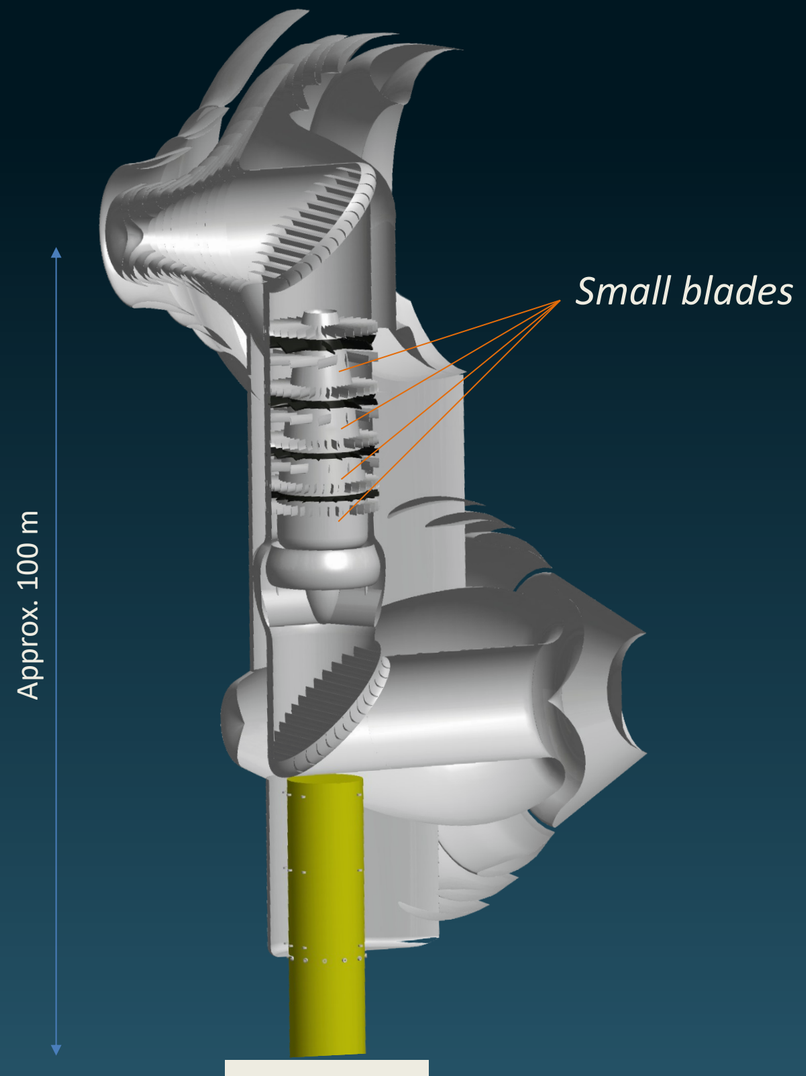
Existing technology must shut down in high wind conditions to avoid damage
Noise pollution

Manufacturing, Transportation, Maintenance

Requires specialised manufacture & transport infrastructure
Catastrophic blade failure
Blade transportation challenges
Equipment maintenance at elevated heights
Blades difficult to recycle

Our Solution

Concealed Blades, Superior Performance



- **Structural Integrity** — Neutral drag coefficient minimises the effect of wind speed on the mast bending load (Steady state condition)
- **Superior Energy Harvesting** — Energy harvesting not limited to Betz limit. Limit is governed by the lift force that can be generated without flow detachment
- **Simple Design and Minimal Cyclic Forces** — Multi-rotor designs are simple to implement allowing for a four-rotor harvester
- **Low Cost and Easy Transportation** — Common low-cost material usage, common construction and transport suitability

How Are We Different

Unique Value Proposition

Key Differentiators:

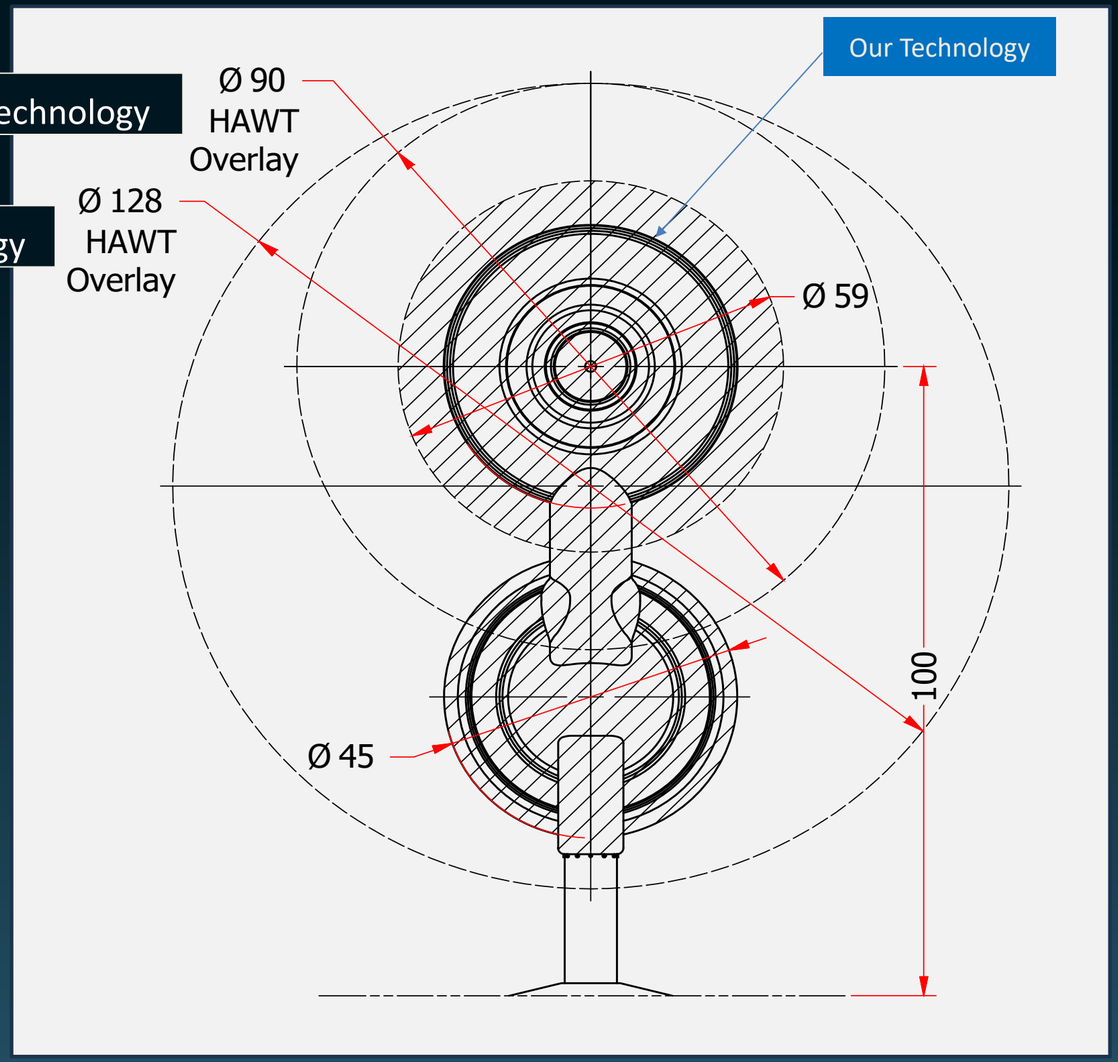
Same power, greater farm density
Near laminar wake field

High wind speed
Neutral tower bending
Shutdown only during extreme weather

Concealed blades
Blades protected against sandstorm and ice damage
No wildlife impact, less intrusive
Greater choice of installation locations

CAPEX, OPEX, LCOE
Capex/Opex simpler manufacture, installation and maintenance.

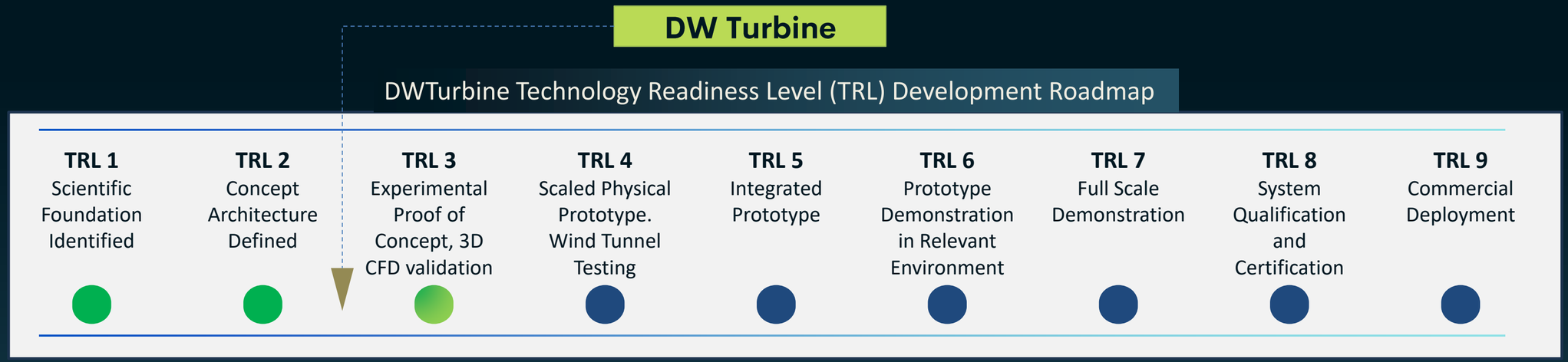
Capacity factor
Higher: Increased operational wind speeds



Where Are We Today?

TRL 2.5

See Appendix 3 for a detailed explanation of all TR Levels



Patents

Provisional: Australian

Granted: United States, Chilean, Eurasian, South Africa

Pending: Australia, Brazil, Canada, China, European, Hong Kong, India, Japan, Mexico, New Zealand, Republic of Korea

Timing

Perfect timing for a revolutionary technology

On January 31, 2026, the world's first 400MWh energy storage station using 628Ah ultra-large battery cells entered operation.

(PR Newswire, 2026)

Viability	Wind Turbine Intermittent Supply solved Battery storage advancements; reduced cost (up to 90%) with longer lifespan
Rapid growth	New market for data centre energy requirements Investments in renewable energy projects, green bonds, and government initiatives Electric vehicle uptake Low-cost electric vehicles from China

Investment Requirements

Partnering for Growth is a Strategic Investment

Partnering for Innovation is a Strategic Breakthrough

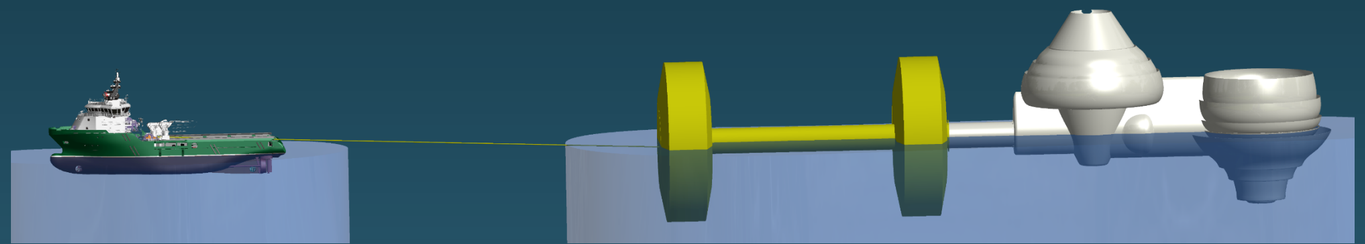
Three investment phases anticipated

Phase 1: USD 5M in two tranches ($1.5M initial, $3.5M milestone-based) for a 14% shareholding (USD 35.7M pre-money)
Progress design to TRL 5

Phase 2: Prototype Demonstration
USD 20M-34M
Progress design from TRL 5 → TRL 6-7

Phase 3: Bankability Demonstration (possible IPO)
USD 60M-120M
Progress design from TRL 7 → TRL9

See Appendix 3 for TRL breakdown



Phase 1 Funding Goal

TRL 2.5 ⟶ TRL 5

See Appendix 3

A **$5m Phase 1 funding** target is:

Achieve TRL 5 within 36 months.

Milestones:
- 3D CFD validation (TRL 3)
- Wind tunnel model (TRL 4)
- Integrated prototype (TRL 5)

Where DWT Likely Sits Today
Current stage:
TRL 2.5

Once 3D CFD is validated:
➞ **TRL 3**

After wind tunnel validation:
➞ **TRL 4–5**

The Team



Adviser, CEO Designate

Dr Dorel Iosif

PhD Applied Mathematics,
University of Melbourne (AUS)
Harvard Business School Executive Program
Fmr. Worley and KBR senior executive
Chairman Carbon Management Society Ltd.



Inventor, Owner, CTO Designate

Chris Martin

BEng(MechEng)(RMIT)(AUS)
BEng(ElecElectEng)(De Mont)(GBR)
Trade Certificate in FITTING AND FIRST CLASS MACHINING (DTWD)(AUS)
Holds 2 granted and 1 provisional patents

Passionate
Knowledgeable
Driven

Collaborating since 1999
Dr Dorel Iosif
Chris Martin

Our team consists of passionate and experienced professionals with diverse backgrounds and complementary skillsets.

Legal – Corporate
MinterEllison LLP
Hong Kong

Legal – Patent
IP Sentinels
Perth Australia

Engineering
(Silent)

Next-Generation Wind Technology Designed for Scalable Deployment

Let’s Bring This Technology To Life Together.



Schedule a conversation to discuss our technology

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APPENDIX 1
Technology in Detail

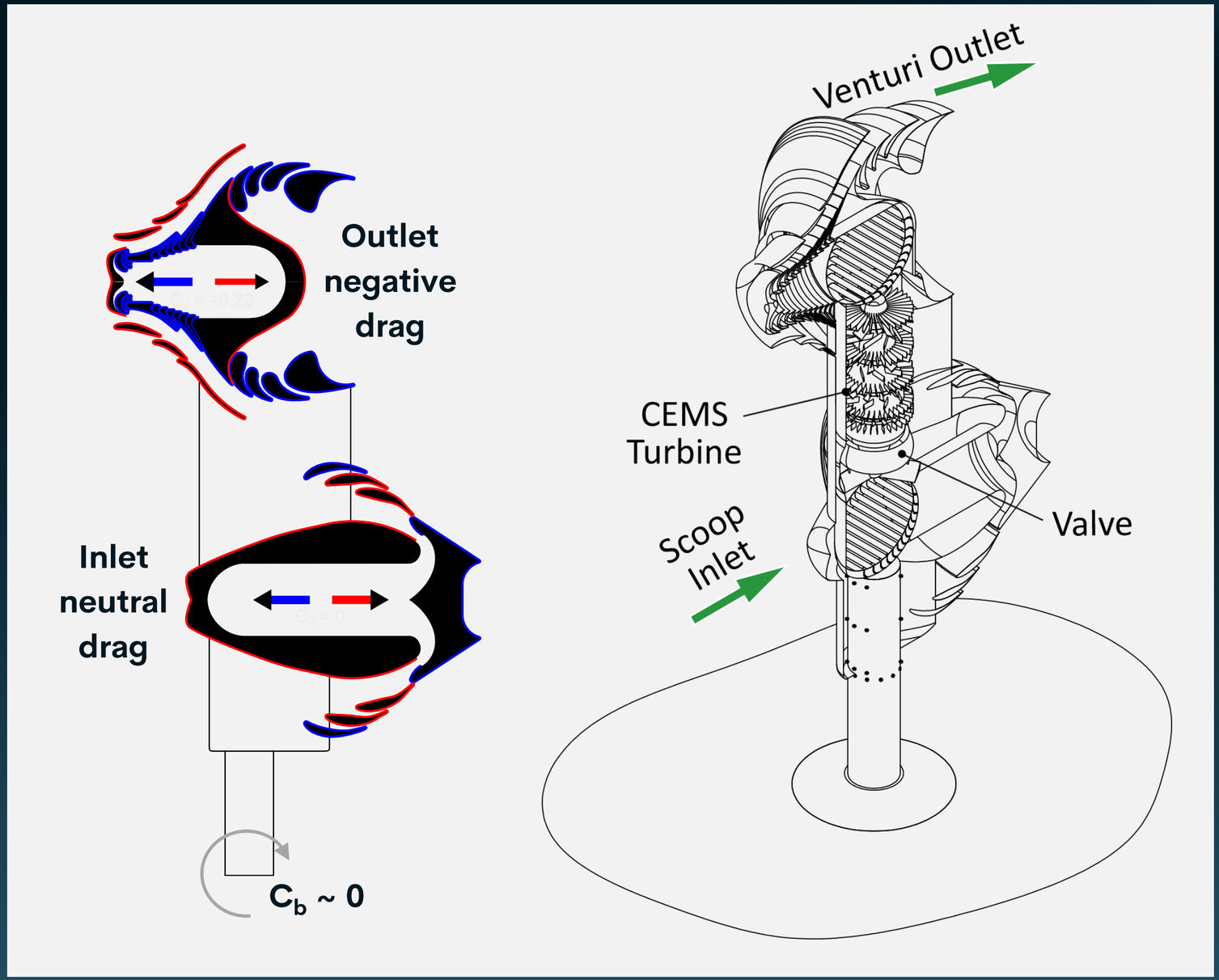
Our technology

Our Unique Value Proposition

Key Differentiators:

- **Neutral Drag**
  High wind speed
  Red surfaces have a positive drag force
  Blue surfaces have a negative drag force

- **Neutral Tower Bending**
  High wind speed



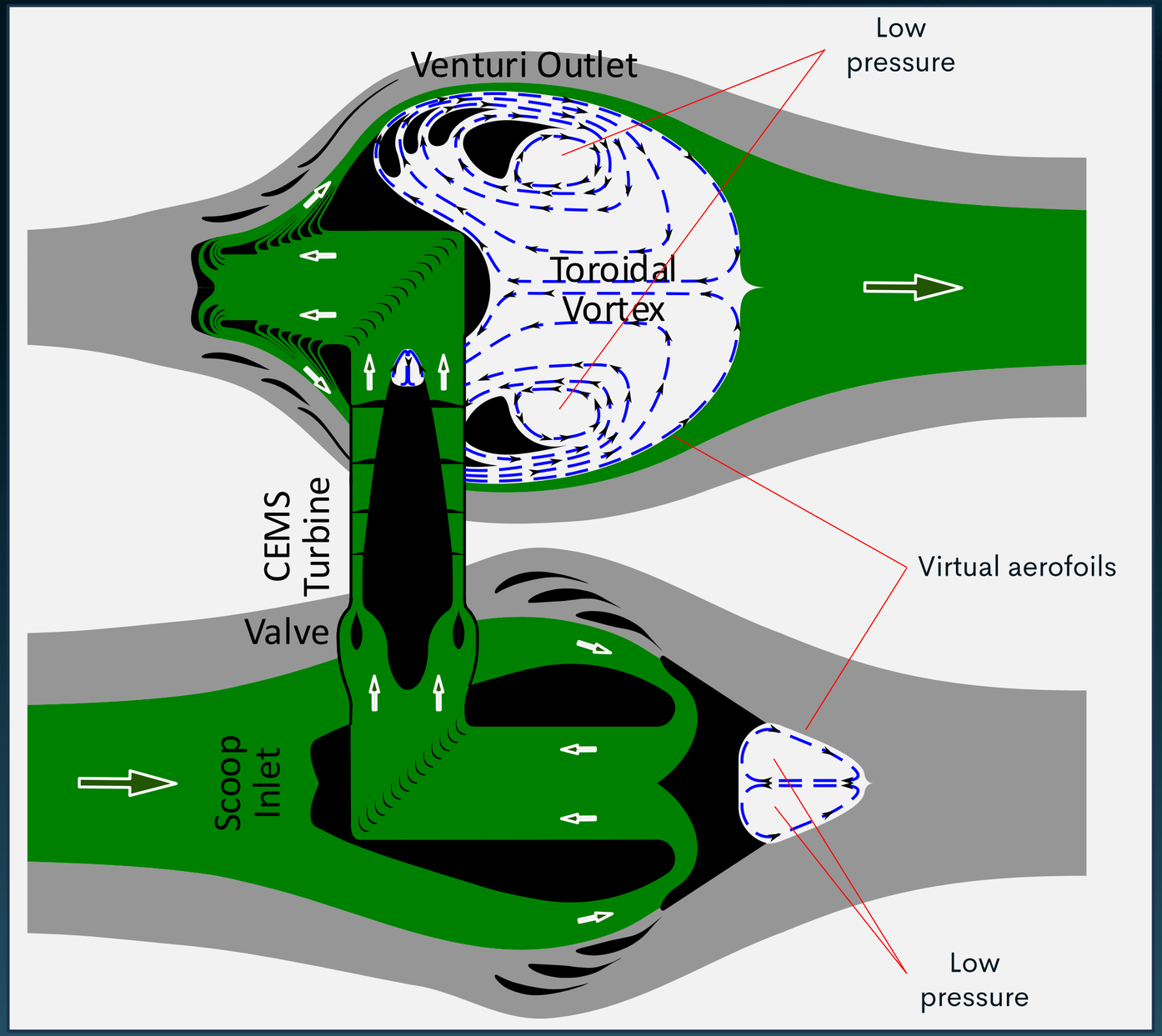
Our technology 1/5

Our Unique Value Proposition

Key Differentiators:

Toroidal vortices

(donut shaped vortices)
Low pressures
Virtual aerofoils
Strengthen and stabilise the fluid flow

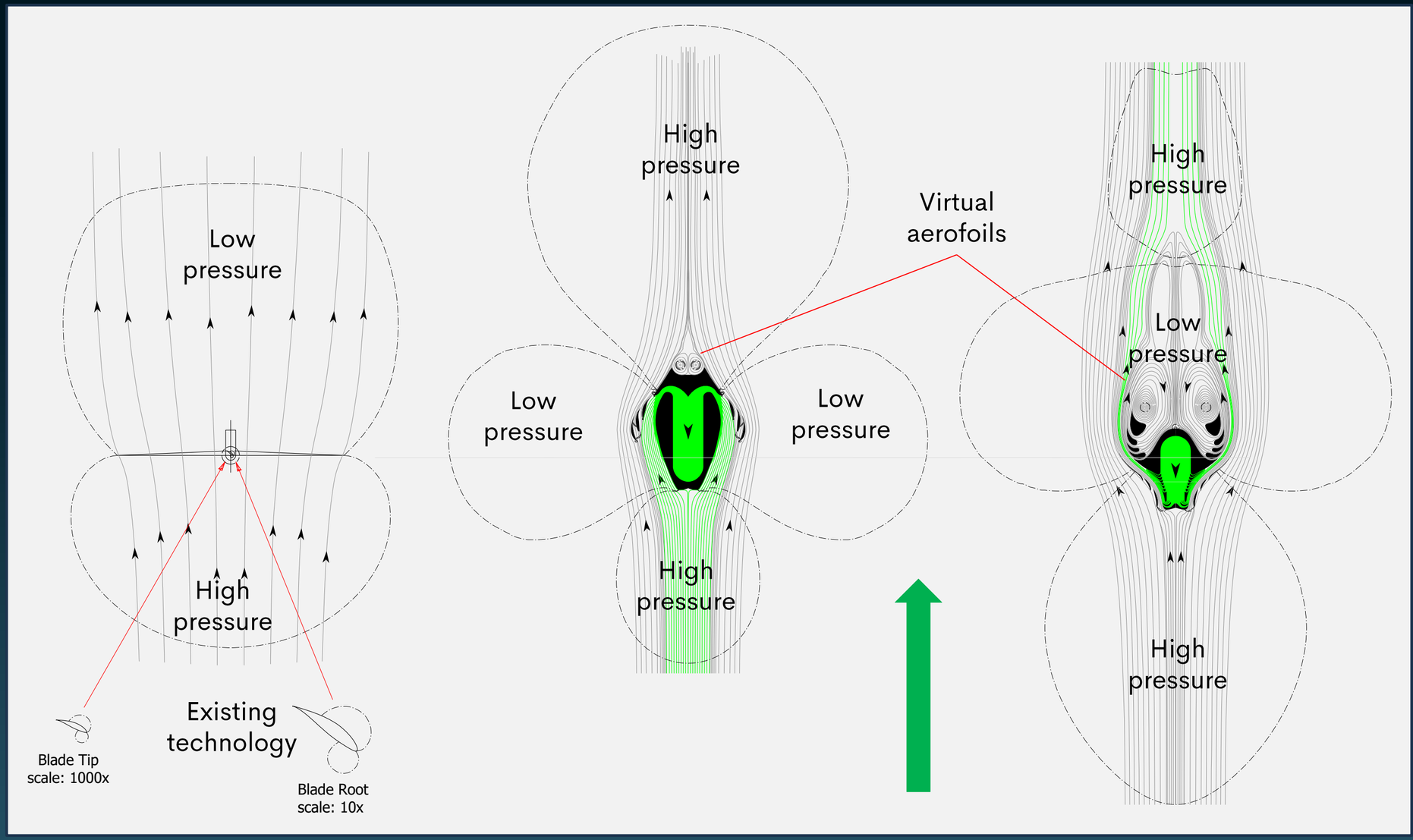


Our technology 2/5

Our Unique Value Proposition

Key Differentiators:

- **Energy harvest reservoirs larger than the frontal area**
  High and Low pressure
- **Virtual aerofoils**
  Maximise power
  Minimise material usage

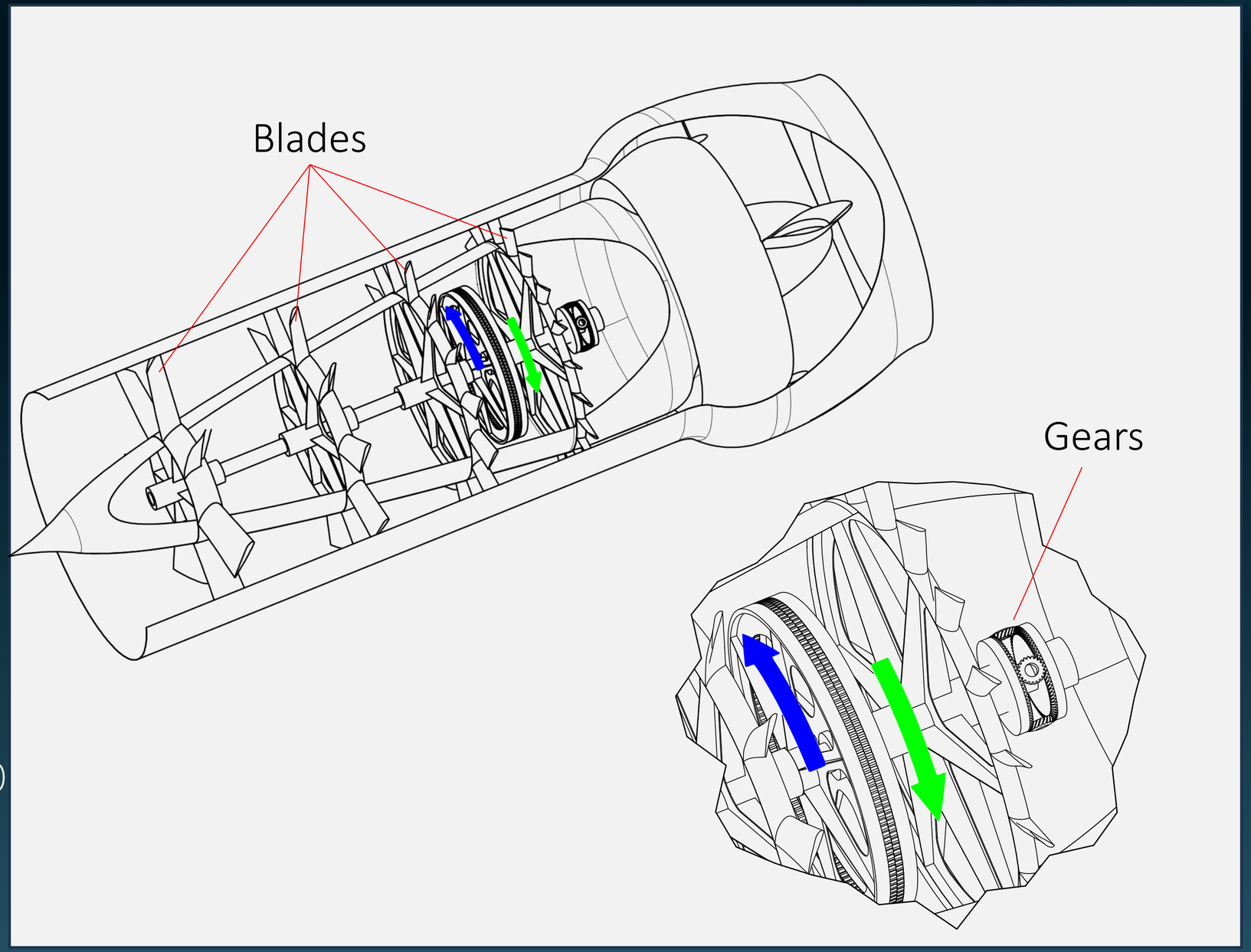


Our technology 3/5

Our Unique Value Proposition

Key Differentiators:

- **Concealed blades**
  High wind speed
  Small blades
- **1:1 Synchronising gears**
  Replaces ≈90:1 overdrive gears
- **Higher Energy harvesting limit**
  Our technology: CEMS limit 2/3 (66%)
  Existing technology: Betz limit 16/27 (59%)



Our technology 4/5

Our Unique Value Proposition

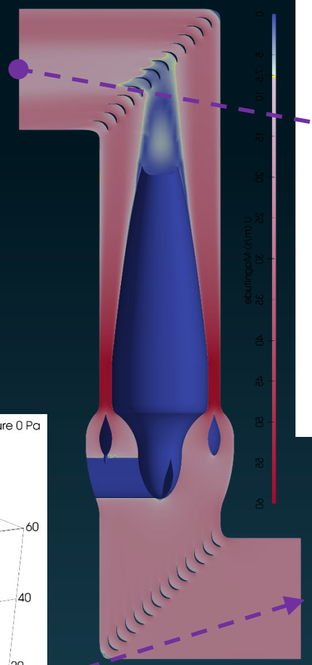
Key Differentiators:

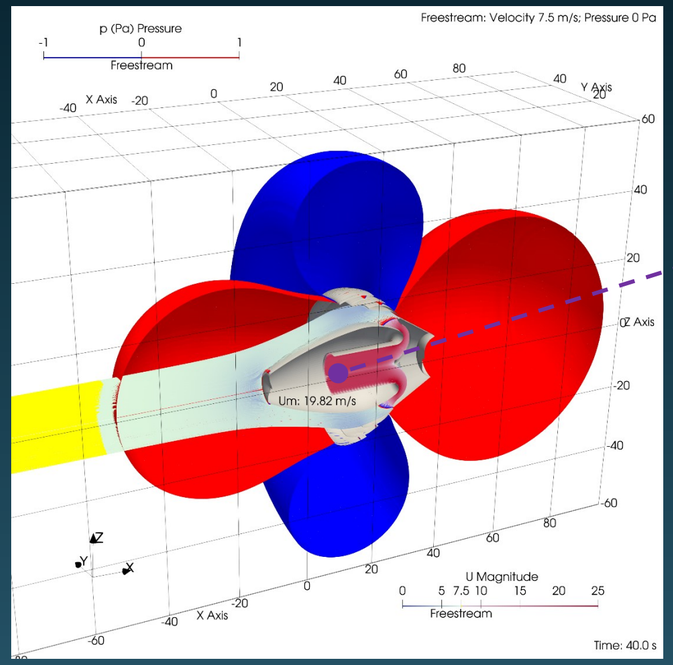
Energy harvest reservoirs

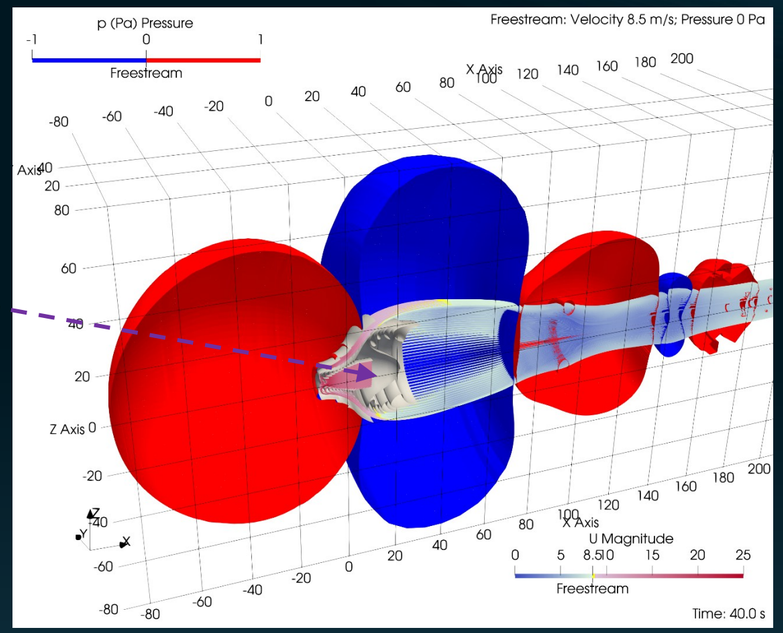
Larger than the frontal area

Red Pressure above freestream

Blue Pressure below freestream







Our technology 5/5

Our Unique Value Proposition

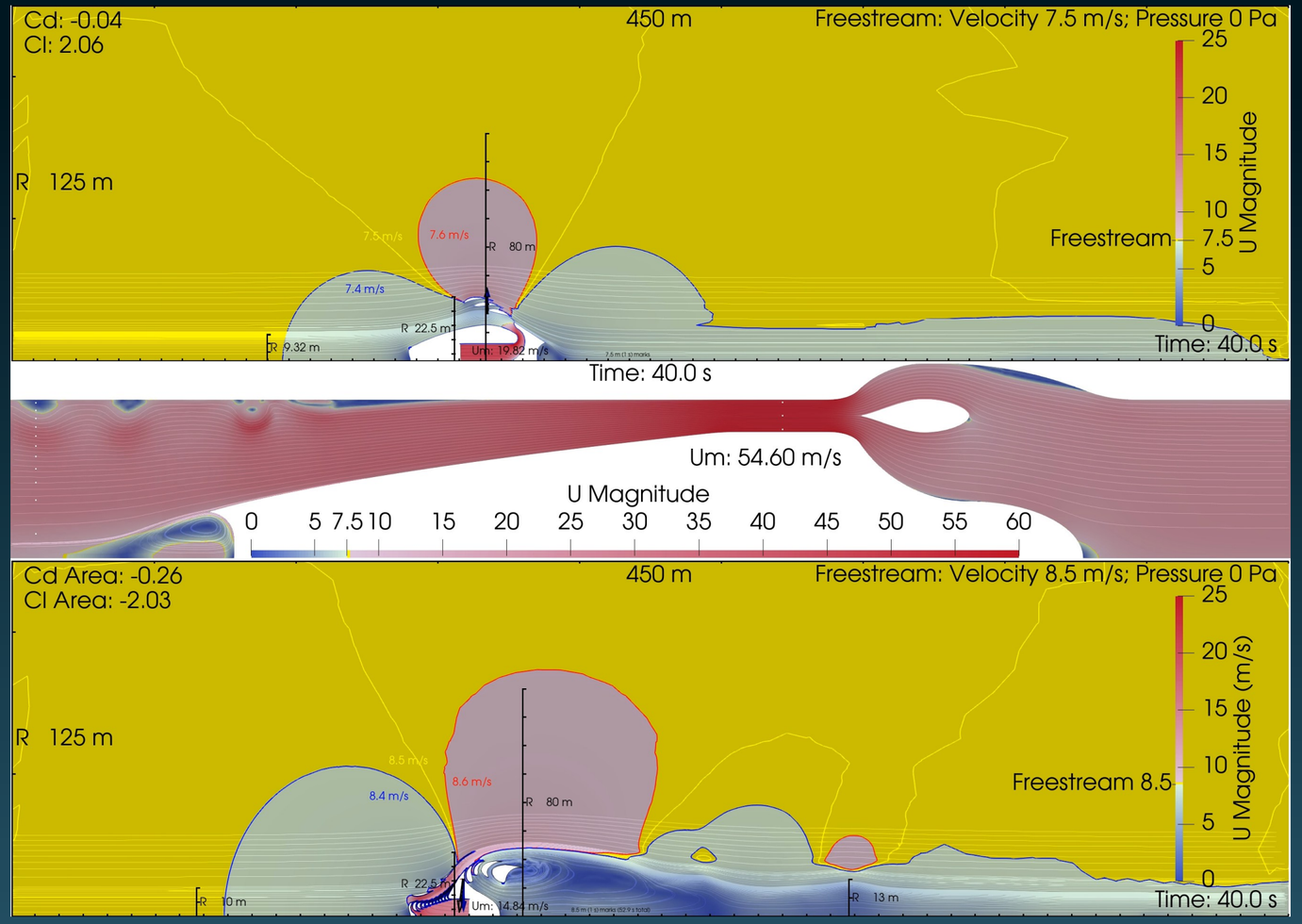
Key Differentiators:

Fluid dynamics
Validation of principle

Inlet

Turbine

Outlet



Click on RHS figure to run video

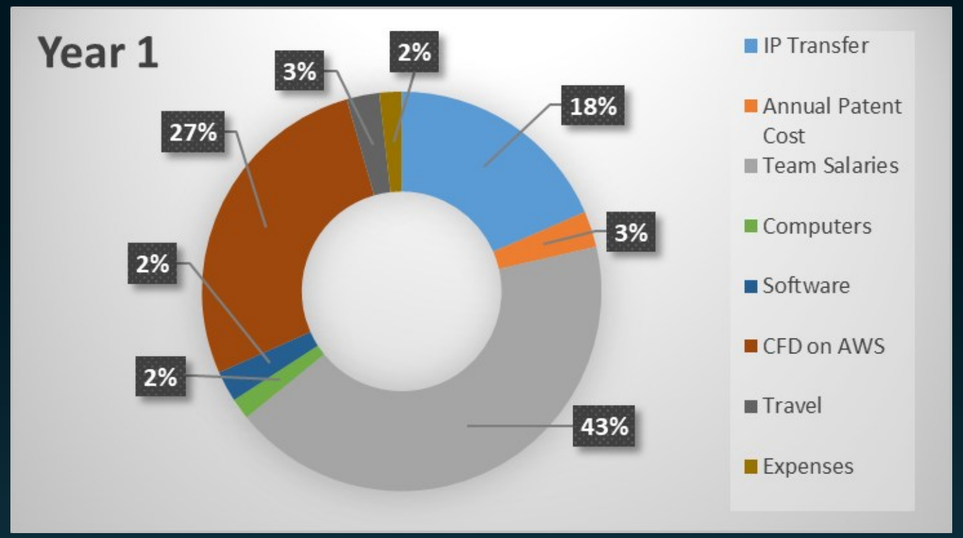
or

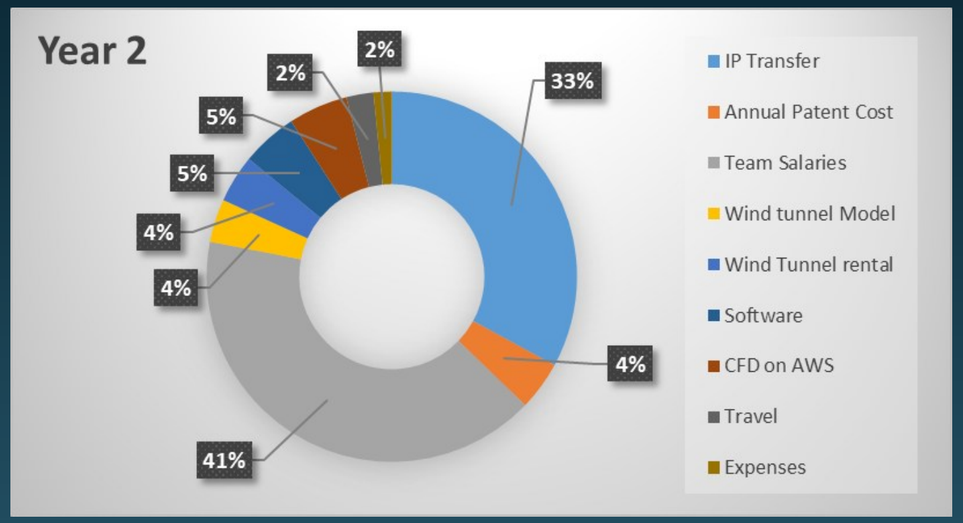
https://youtu.be/aF_o7G8pxOo

CFD https://www.dwturbine.com/#cfd

APPENDIX 2
Phase 1 Funding.
Detailed Expense Allocation

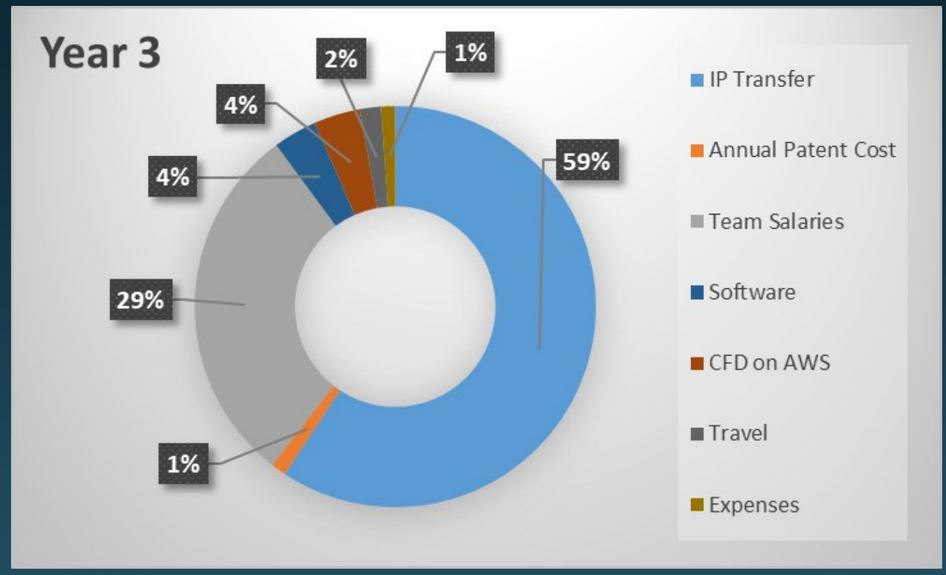
Expected Annual Expenses





	Year 1	Year 2	Year 3	
IP Transfer	$250,000	$500,000	$1,250,000	
Patent	$39,215	$64,715	$25,791	
Team	$577,465	$619,718	$619,718	
Wind tunnel Model		$57,276		
Wind Tunnel rental		$63,380		
Computers	$23,095			
Software	$33,592	$74,123	$74,123	
CFD on AWS	$367,808	$78,816	$78,816	
Travel	$36,007	$36,007	$36,007	
Expenses	$24,000	$24,000	$24,000	
				TOTAL
Total	$1,351,182	$1,518,036	$2,108,456	**$4,977,674**

Further detailed breakdown of items is available



APPENDIX 3
TRL Details

TRL 1

Status: COMPLETED

Scientific foundation identified

Activities:

- Identification of key aerodynamic principles:
  - Aerofoil flow acceleration
  - Venturi effect
  - Diffuser-driven flow expansion
  - Toroidal vortex stabilization
- Conceptual integration of:
  - concentrator + diffuser + internal turbine
- Identification of energy reservoir concept larger than frontal area.

Evidence produced:

- Scientific literature review
- First-order energy balance models
- Analytical aerodynamic reasoning.

TRL 2

Status: COMPLETED

Concept architecture defined

Activities:

Preliminary design of the DWT architecture

2D Computational Fluid Dynamics (CFD) analyses

Integration of:

- inlet aerofoil
- flow concentrator and diffuser
- toroidal vortex formation
- internal turbine system

Conceptual design of:

- internal CEMS turbine
- contra-rotating electromagnetic generator
- gate valve flow control.

Evidence produced:

- early CAD geometry
- basic analytical flow modelling
- conceptual system diagrams.

TRL 3

Experimental Proof of Concept

This is where we are **approaching now**.

Goal: Demonstrate that the **integrated aerodynamic concept actually works**.

Activities:

3D CFD validation

- full 3D CFD model, turbulent flow modelling
- vortex stability analysis
- pressure differential validation
- mass flow amplification verification.

Validation targets:

- energy reservoir larger than frontal area
- stable toroidal vortex
- venturi acceleration maintained
- diffuser pressure recovery.

Outputs:

- CFD performance curves
- predicted Cp (power coefficient)
- structural pressure loads.

TRL 4

Component Validation in Laboratory

Goal: Validate **physical aerodynamic behaviour**.

Activities: Build **scaled physical model**

Test in wind tunnel:

Measure:

- inlet flow acceleration
- vortex formation
- diffuser efficiency
- turbulence characteristics
- structural loading.

Testing equipment:

- particle image velocimetry
- pressure sensors
- flow visualisation.

Outputs:

- empirical validation of CFD
- model calibration.

TRL 5

Integrated System Validation in Controlled Environment

Goal: Validate **a full scaled subsystem prototype**.

Activities:

Wind tunnel or controlled outdoor testing of:

- aerodynamic shell
- internal turbine rotor
- generator prototype.

Key tests:

- power curve measurement
- torque behaviour
- internal turbine efficiency
- vibration analysis.

This stage proves: **energy conversion chain works**
(flow → turbine → generator)

TRL 6

Prototype Demonstration in Relevant Environment

Goal: Demonstrate **a large prototype outdoors**.

Activities:

Build **partial or scaled turbine** (likely 1:3 or 1:5 scale)

Install in outdoor wind environment.

Testing:

- structural loading
- turbulence effects
- vortex stability in natural winds
- turbine control
- shutdown behaviour.

This stage answers the key investor question:

Does the system survive real wind?

TRL 7

Full Scale Demonstration Prototype

Goal: Build **first full-scale DWT turbine**.

Likely:

- 3–4 MW class
- battery captured prototype.

Testing:

- full load operation
- structural fatigue
- operational reliability
- power curve certification.

This is the stage where certification bodies become involved such as:

- DNV
- TÜV.

TRL 8

System Qualification

Goal: Technology proven and certified.

Activities:

- full IEC certification
- grid compliance
- safety certification
- reliability testing.

Pilot wind farm deployment.

Usually: 3–5 turbines deployed.

This demonstrates **bankability**.

TRL 9

Commercial Deployment

Goal: Full commercial operation.

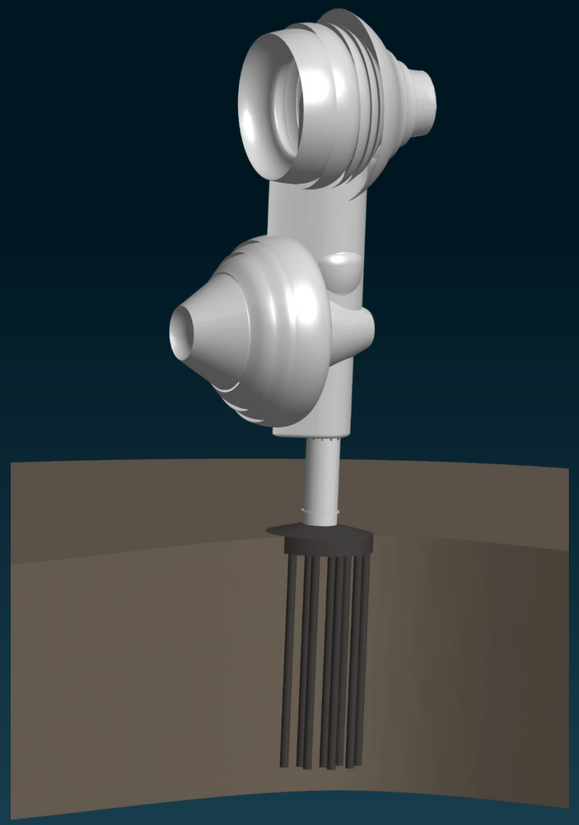
Activities:

- wind farm installation
- standardised manufacturing
- supply chain operational.

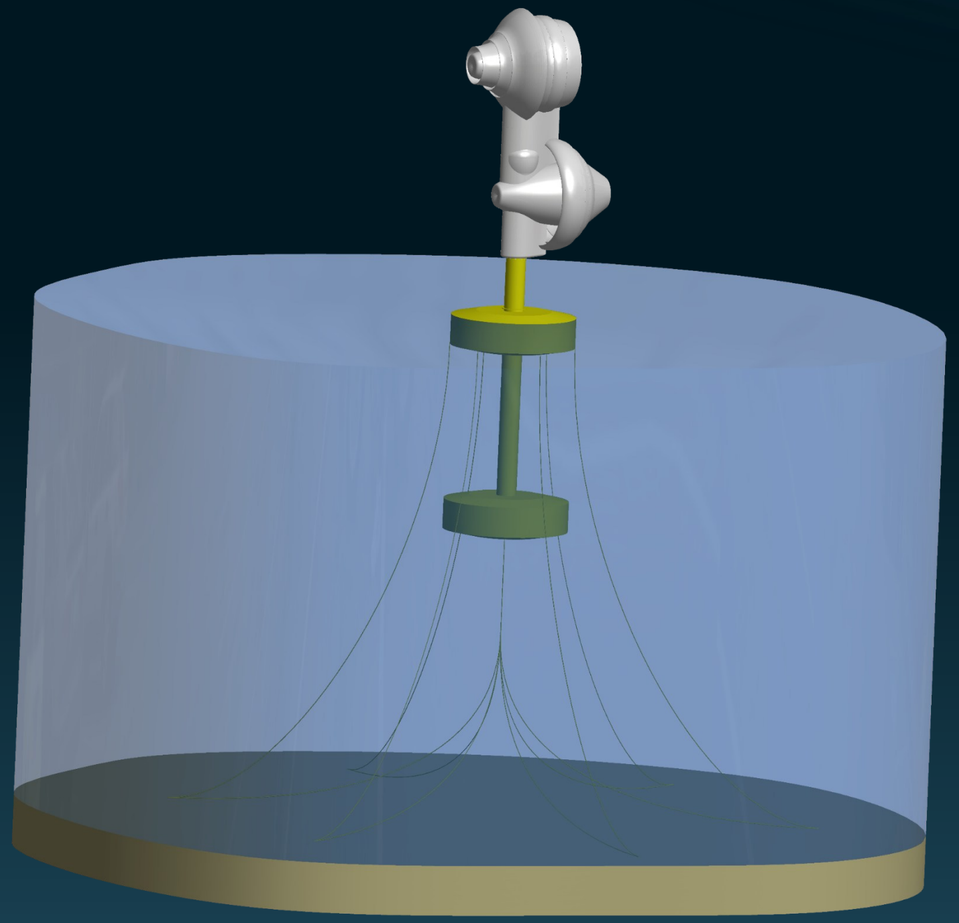
Technology now comparable with industry systems such as those produced by Vestas and Siemens Gamesa.

APPENDIX 4
Applications and Use Cases

Utility



Onshore



Offshore

Shipping

Existing Technology--



The wind-powered Pyxis Ocean cargo ship sailing in the English Channel in March 2024 (Cargill)

Our Technology--



Existing Technology

Wind direction dependent
Sails consume energy when sailing directly into the wind
Sails transfer force to the ship
High torque load on the masts

Our Technology

Wind direction independent
Sails directly into the wind with full energy production capacity
DWTurbines transfer energy to the ship’s propellers
Low torque load on the masts

Micro



Existing Technology--

Source: primuswindpower



Our Technology--

Off-Grid



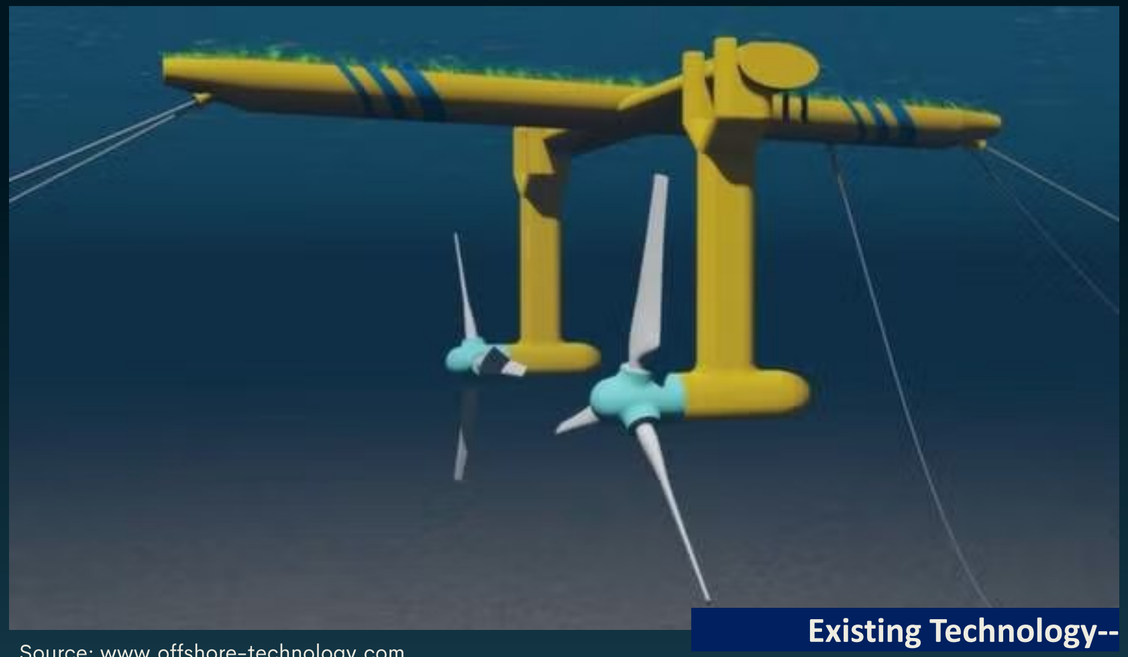
Source: Lila Holdings

Existing Technology--



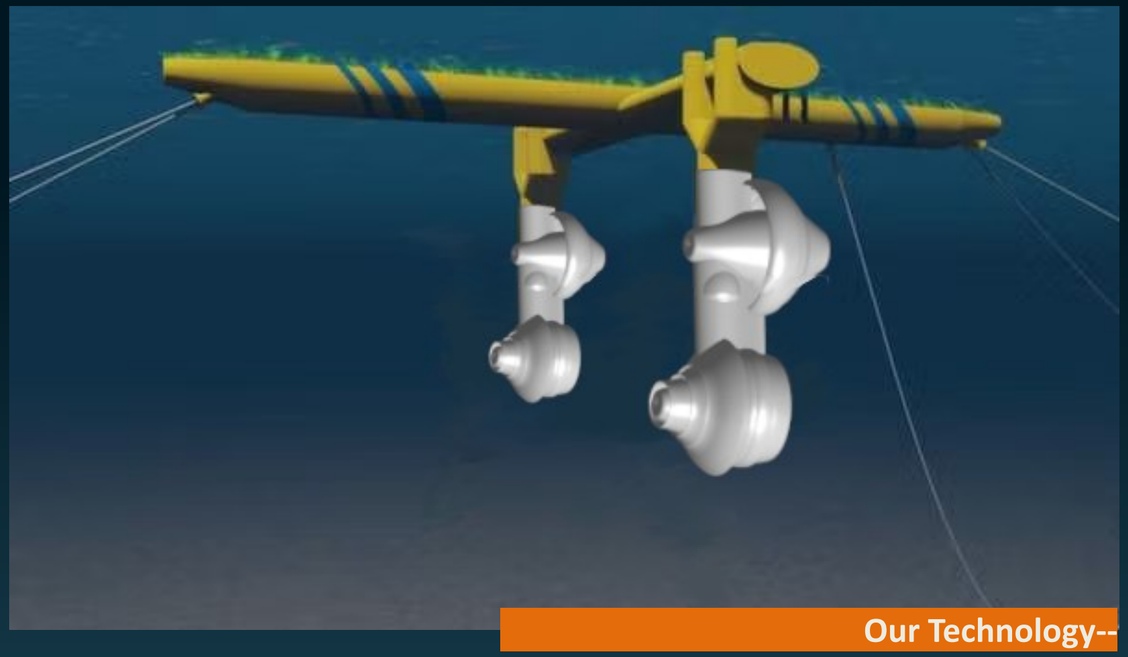
Our Technology--

Tidal



Source: www.offshore-technology.com

Existing Technology
High torque load on the masts



Our Technology
Low torque load on the masts