



MIRAKATEC PITCH DECK 2021

HEADING TO FORTH FRONT OF HYDRO-POWER ADVANCED TECHNOLOGY

Energy recovery pump system

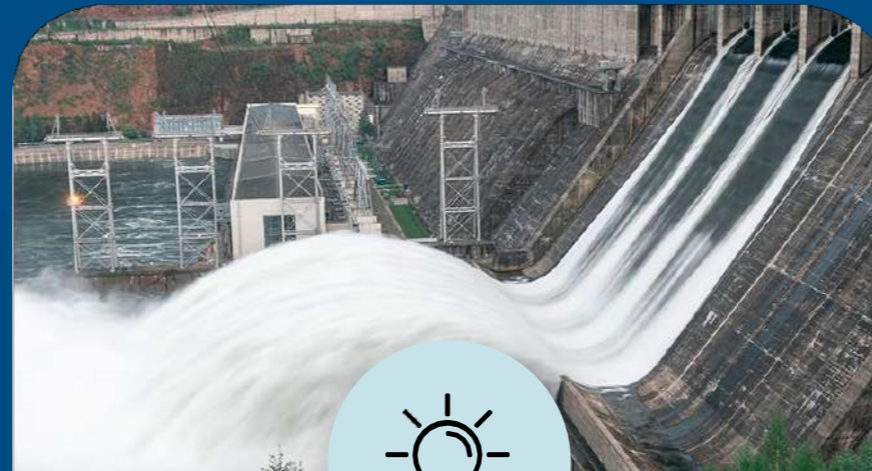
New generation of PHP Hydroelectric power plant efficiency increase

WHAT IS MIRAKATEC?



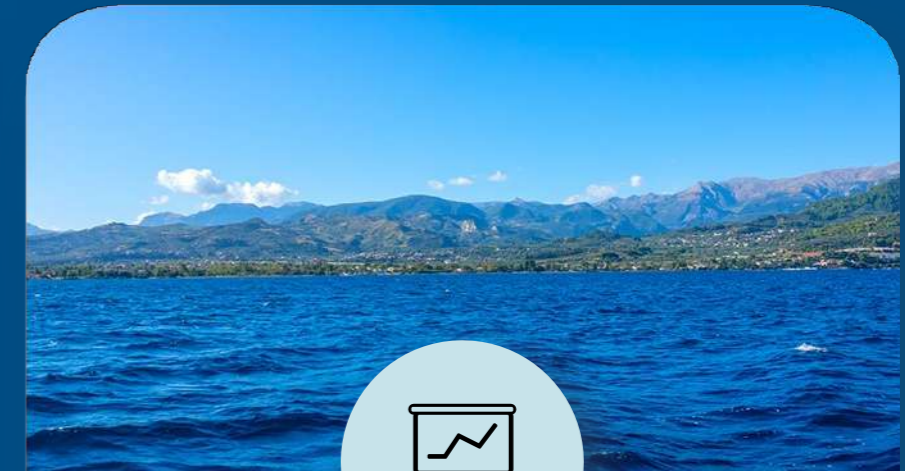
New Hydropower Equipment

Mirakatec® is bringing to market a new hydropower equipment, Energy Recovery Pumping System, that increases the efficiency of Hydro-Power Energy Storage Industry



Unique on Its Kind

Mirakatec® Technology is unique on its kind as conceptual functionality, proven by WIPO search report



Wide range of application opportunities

Mirakatec® has a wide range of application opportunities, from Hydropower to Mining Industry, from Agriculture to Drinking Water Industry, from Fresh water to Sea water applications

MANAGEMENT TEAM



Seung Hyun Kim
CMO

An expert in Marketing Strategy and Business Planning

Achieved Bachelor of Arts Degree in Anthropology at National Taiwan University



Lishon Chipango
CFO

A financial professional who earned a Bachelor of Accountancy and a EMBA

A businessman with interests in agriculture, real estate development, mining and clean energy areas



Mohammad Olid Hyder
CTO

More than 20 years of ship board experience in Marine Engineering since March 1988 and achieved the rank of Chief Engineer

Achieved Class 1 Certificate of Competency (COC) on Marine Engineering and passed Class 2 Marine Engineering certificate exam



Mohammed Shahnewaz Matin
CLS

Over 12 years of Shore based Technical management experience

Earned Class 1 Certificate of Competency (COC) as well as Advanced Diploma in Marine Engineering at Singapore Polytechnic

PROBLEMS

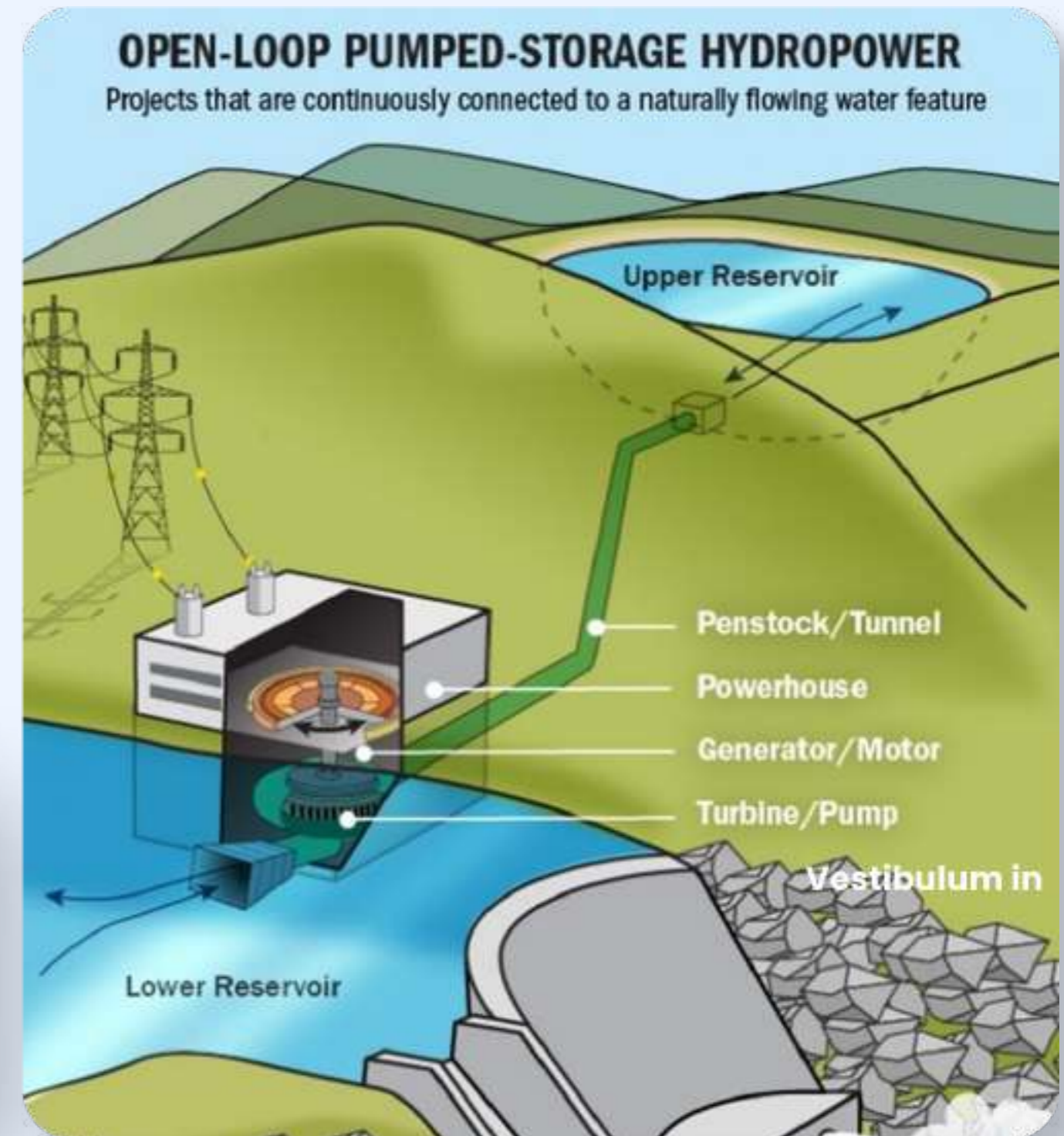
CURRENTLY EXIST IN THE PUMPED STORAGE HYDRO-POWER (PSHP) INDUSTRY

No Alternatives
Technology

Low Efficiency & Profit

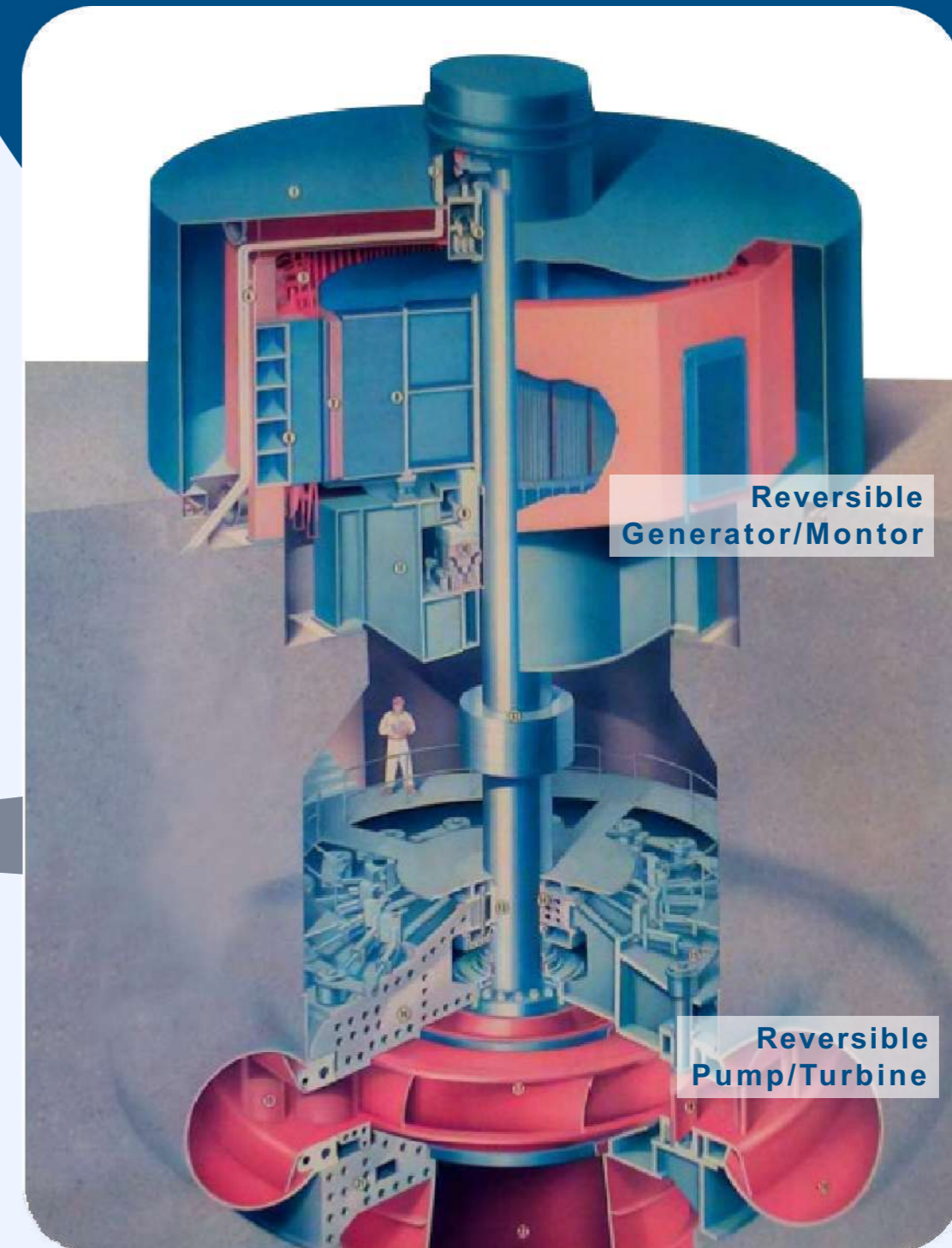
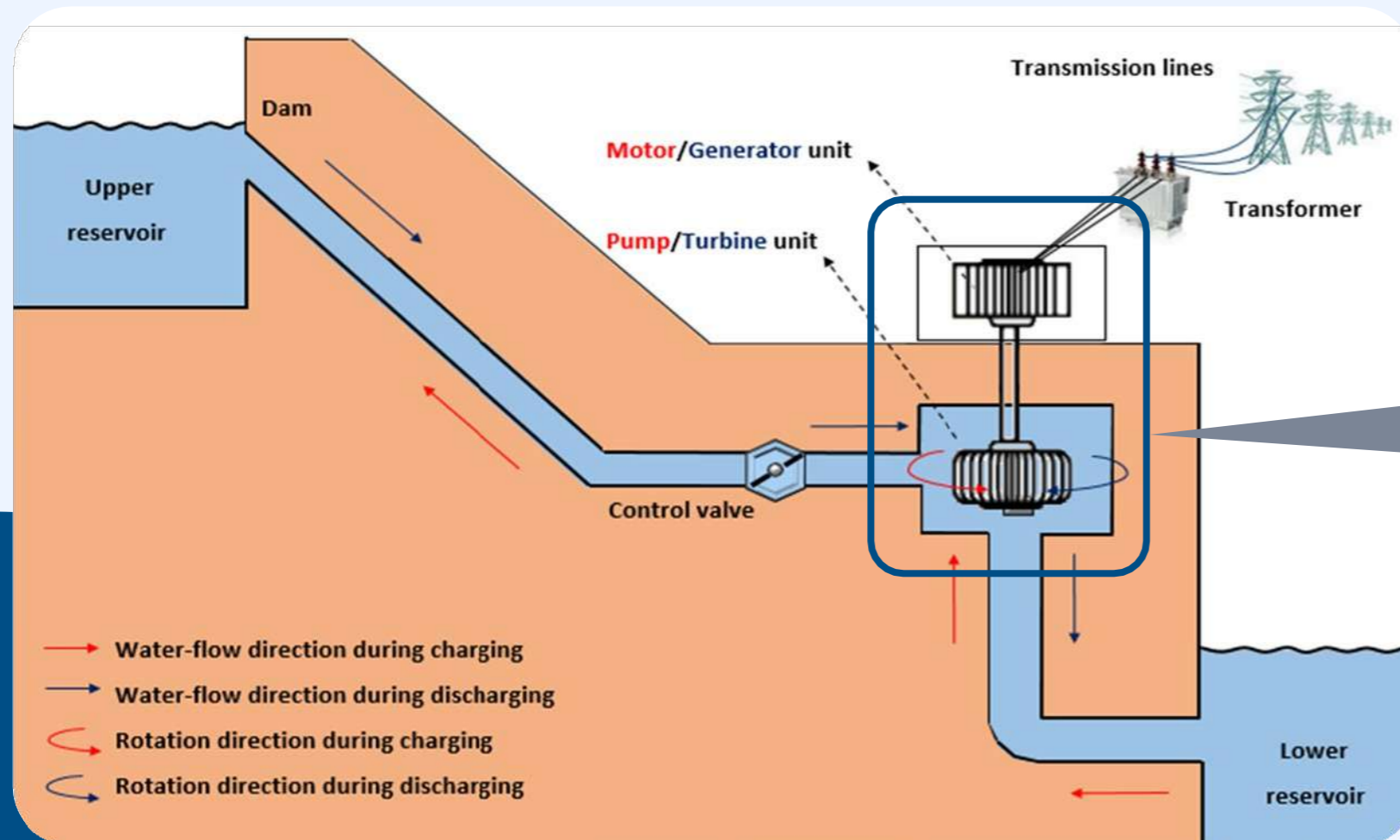
Presently, the PSHP operates with 67% efficiency with Pump-Turbine system

Economic profit is low and energy prices are unstable on the market



WITH PRESENT TECHNOLOGY

MAX EFFICIENCY 68%



SOLUTIONS

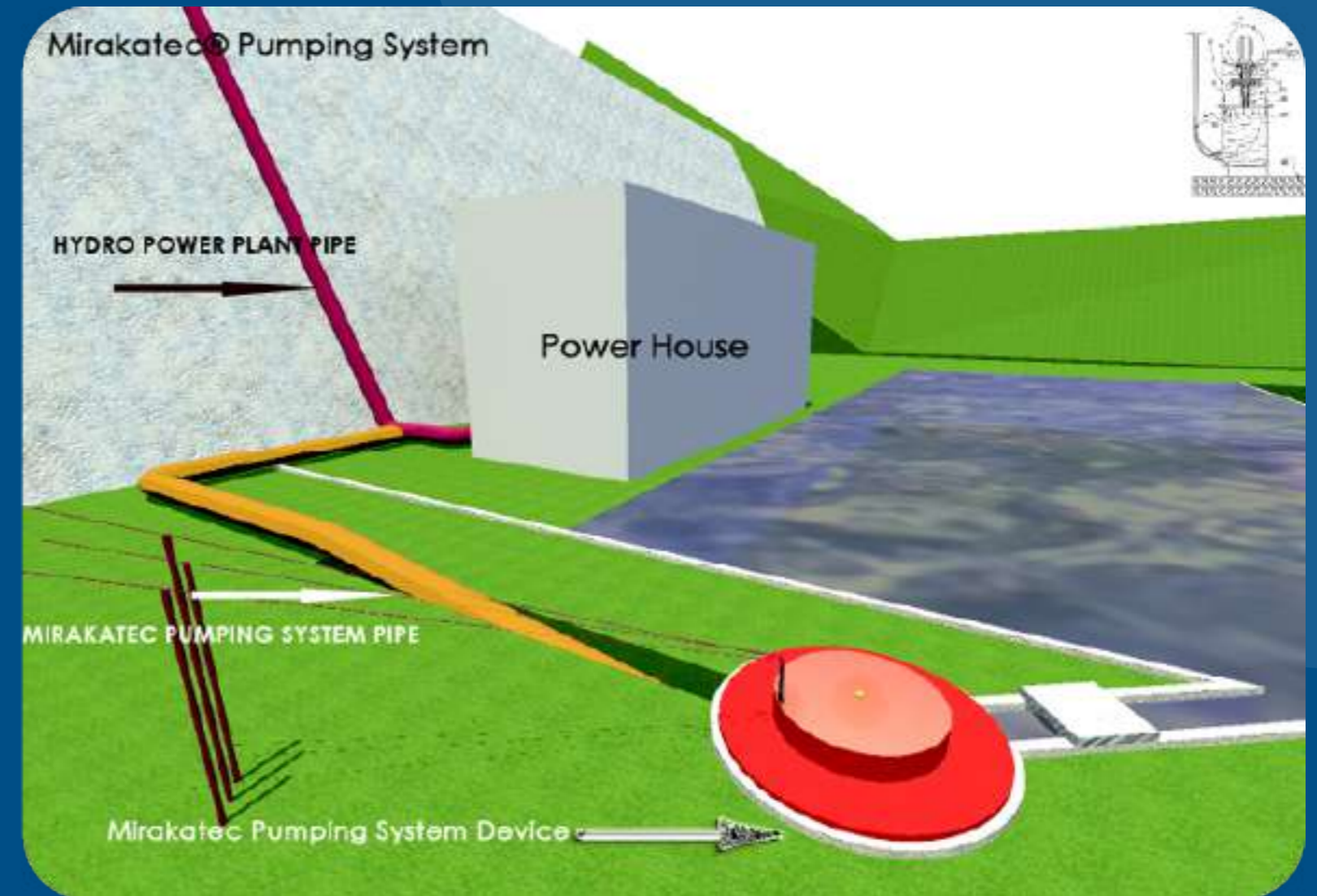
MIRAKATEC PROVIDES TECHNOLOGY SOLUTIONS TO PSHP INDUSTRY

Efficiency Increase

23%

Profit Increase

32%



COMPARING WITH
**PRESENT
TECHNOLOGY**



Technology

Present technology named:

Pump/Turbine

Mirakatec® Technology named:

Energy Recovery
Pumping System



Efficiency

Present Efficiency:

67%

Mirakatec® Efficiency:

90%



Profits

Present Profits:

15%

Mirakatec® Profits:

+32%

PRODUCTS & SERVICES

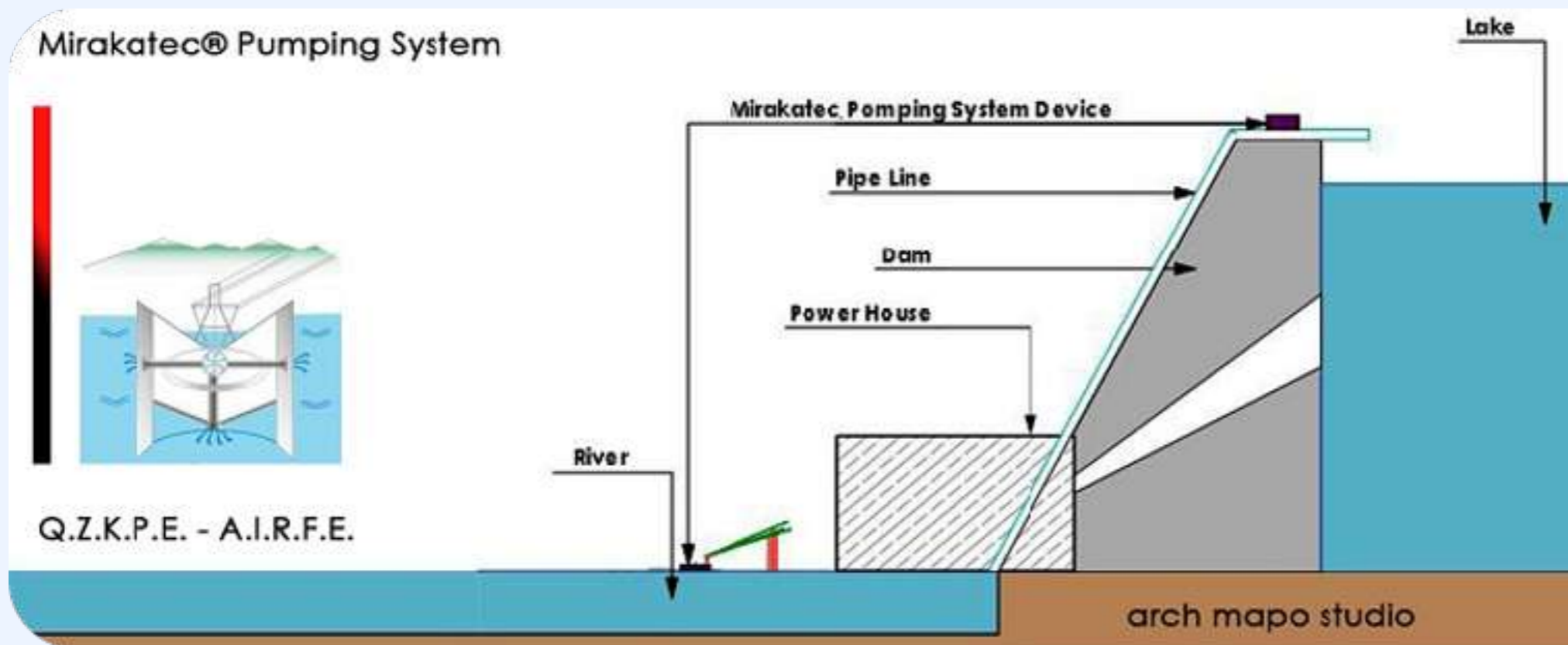
MIRAKATEC PUMPING SYSTEM DEVICE

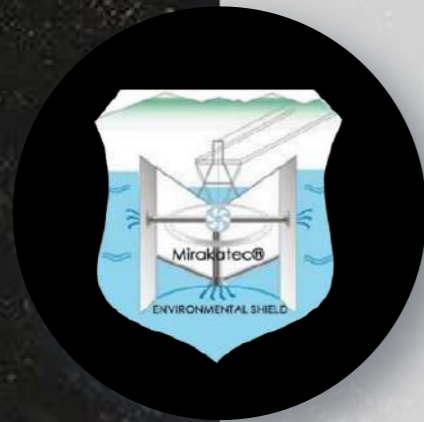


The Energy Recovery Pump System provided by Mirakatec:

- is applicable on Pumped Storage Hydropower Plants (PSHP)

- contributes to a 23%-25% efficiency increase





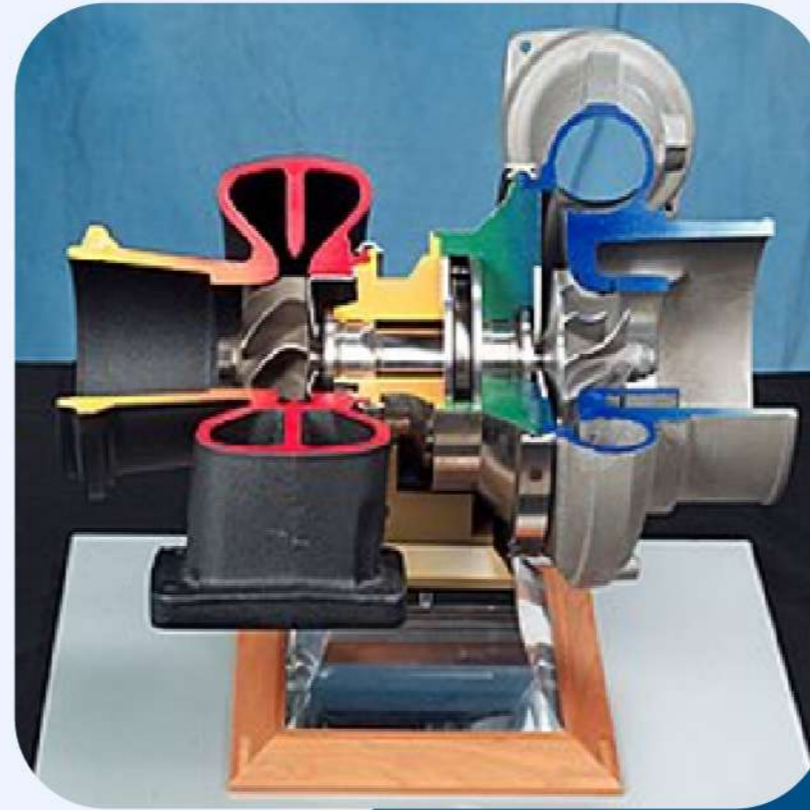
SERVICES

MIRAKATEC

- ✓ Mirakatec Hydropower Equipment Manufacturing Services
- ✓ Mirakatec System Control and Operation Services
- ✓ Maintenance & Services
- ✓ R&D Industry support (Mirakatec Fabrication)

MIRAKATEC

KEY TECHNOLOGY



The Idea of Technology

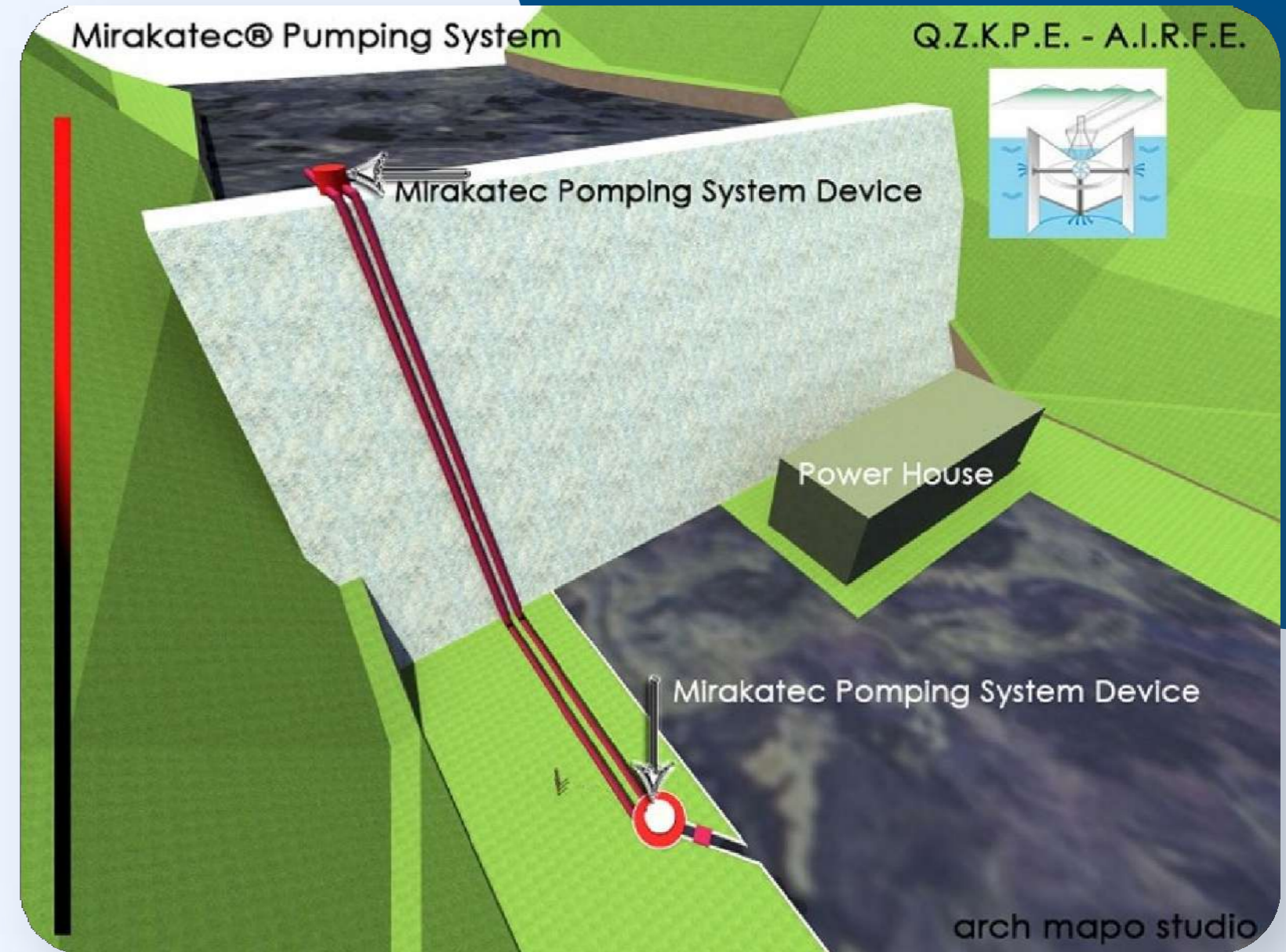
- Inspired by the Automobiles Turbochargers
- This concept has been adopted into Jet Engine to increase efficiency
- Worked around 12 years to convert and apply the Turbocharger technology on Hydropower Plants

Invention

Energy Recovery Pumping System, powered by water kinetic energy

MIRAKATEC TECHNOLOGY

ENERGY RECOVERY PUMPING SYSTEM



MARKET SIZE

Global Hydropower Generation Market

\$202.4 B
CAGR: 5.9%

Global Hydropower Installed Capacity

1,308 GW

Canadian Hydropower Installed Capacity

81,286 MW

Canadian Pumped Storage Installed Capacity

177 MW

MIRAKATEC

MARKET VALIDATION

Bill Gates-led Fund Invests in Startup That Built a New Hydropower Turbine

Akshat Rathi, Bloomberg News



(Bloomberg) -- Hydropower—converting moving water into energy—is the single biggest source of clean power in the world, but relies on a 200-year-old technology that hasn't changed all that much. Natel Energy Inc., a California-based hydro power startup, has developed a new turbine that updates that technology, and now the company is raising \$11 million in a funding round led by Schneider Electric Ventures and Breakthrough Energy Ventures, a fund helmed by Bill Gates.

The turbine lowers the construction cost of power plants, because it requires less cement and steel. It also allows for safer passage for fish, which has become a stringent environmental regulation for these types of projects in both the U.S. and Europe.

Bezos And Gates Backed Fund To Invest In Clean Energy Startups

By [MINING.com](#) - Jan 19, 2021, 10:00 AM CST



Breakthrough Energy Ventures (BEV), the [clean-tech fund backed by well-known billionaires](#) including Bill Gates, Jeff Bezos and Michael Bloomberg, has raised \$1 billion for the second time in four years to help start-ups [capable of drastically cutting global emissions](#).

Founded in 2016, the venture capital fund backed 45 emerging companies with its first billion and it is now planning to support between 40 and 50 emerging businesses.

While BEV's scope is broad, it is mostly focused on "clean" products and technologies, such as greener steel and cement, long-haul transport and energy storage.

The screenshot shows the Canada Energy Regulator website. The header includes the Canadian flag, the text 'Canada Energy Regulator' and 'Régie de l'énergie du Canada', and a search bar with 'Search Canada.ca'. A navigation menu contains 'Safety and environment', 'Consultation and engagement', 'Applications and hearings', 'Data and analysis', and 'About Us'. The breadcrumb trail reads 'Home > Data and analysis > Energy Markets > Market Snapshots'. The main article title is 'Market Snapshot: Pumped-storage hydro – the largest form of energy storage in Canada and a growing contributor to grid reliability'.

MIRAKATEC

BUSINESS MODEL



Target Customer (B2B)

- Hydroelectric Power companies
(Ontario Power Generation & Nova Scotia Power)
- Hydropower Equipment Manufacturing Companies

Selling Product (Pump System): **\$300,000/MW**

Operation: **8% - 12%**

Maintenance: **5% - 8%**

IP Licence:

*Manufacturing Licence: 5% - 8% **royalty points***

*Operation Licence: 5% - 8% **royalty points***

*Maintenance Licence: 2%-3% **royalty points***



COMPETITION



Advanced Technology	✓	✓			
Cost Effective	✓	✓	✓	✓	✓
High Efficiency (90%+)	✓				
High Profit	✓				
Comprehensive Services	✓		✓		
Multi-functional	✓	✓	✓		✓

GO-TO-MARKETING STRATEGY



Direct Marketing



Digital Marketing

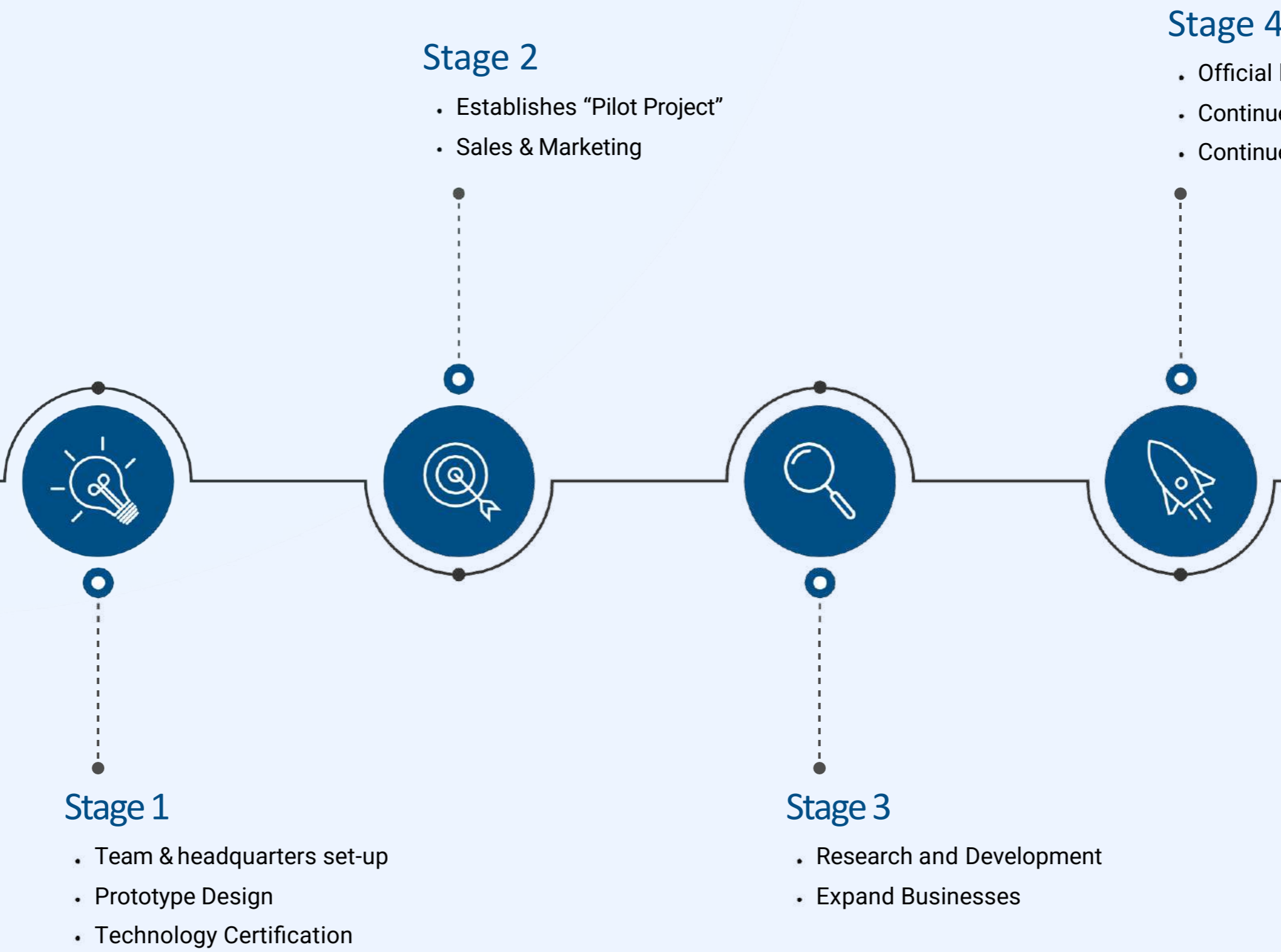
- SEO: Early contact project proposal with new projects.
- Google Ads
- Through Industry organisations membership like:
<https://ease-storage.eu/>
<https://energystorage.org/>



Industry & Government Events

- ESHA
(European Small Hydropower Association)
- IHA
(International Hydropower Association)

MILESTONES



Stage 1

- Team & headquarters set-up
- Prototype Design
- Technology Certification

Stage 2

- Establishes "Pilot Project"
- Sales & Marketing

Stage 3

- Research and Development
- Expand Businesses

Stage 4

- Official launch (Full Services)
- Continue: Sales & marketing
- Continue: R&D

ACHIEVEMENTS

IP

1. WO2020064689 - TURBINE ASSEMBLY

[PCT Biblio. Data](#) [Description](#) [Claims](#) [Drawings](#) [ISR/W0SA/A17\(2\)\[a\]](#) [National Phase](#) [Notices](#) [Documents](#)

Publication Number

WO/2020/064689

Publication Date

02.04.2020

International Application No.

PCT/EP2019/075635

International Filing Date

24.09.2019

IPC

F03B 3/02 2006.01

CPC

F03B 3/02 F03B 5/00 F05B 2240/123

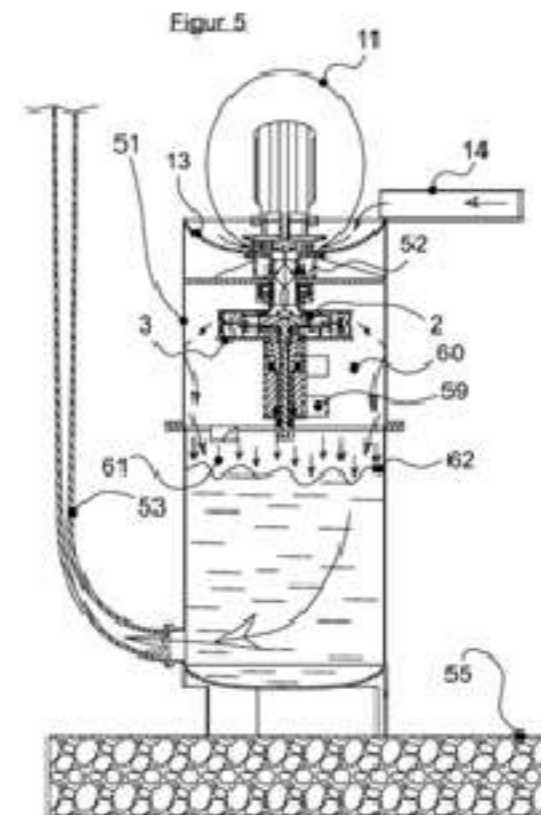
F05B 2240/132 Y02E 10/20

Applicants

MIRAKA, Mirakatec [AL]/[CH]

Inventors

MIRAKA, Emirand
MIRAKA, Vullnet



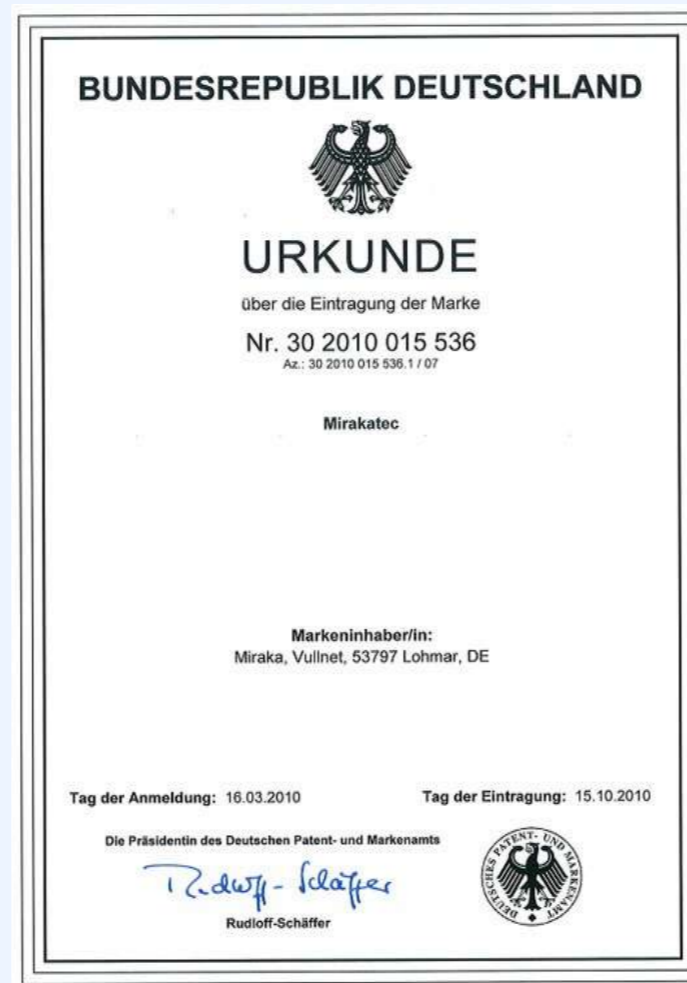
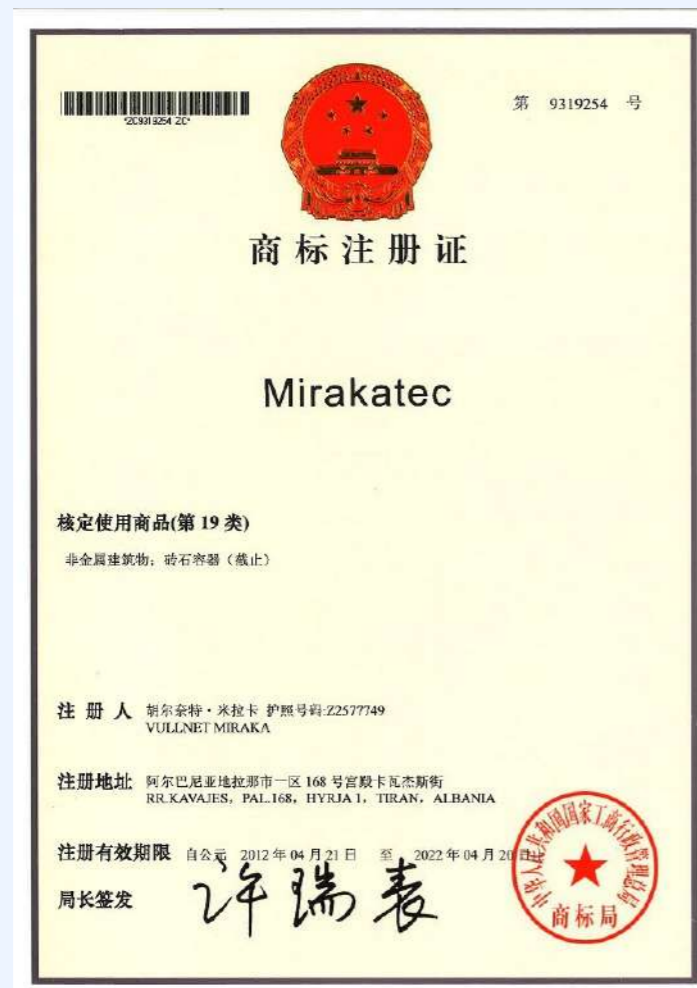
Title

[DE] TURBINENANORDNUNG
[EN] TURBINE ASSEMBLY
[FR] AGENCEMENT DE TURBINE

ACHIEVEMENTS

TRADEMARK

MIRAKATEC® is internationally registered as a trademark




ACHIEVEMENTS

MIRAKATEC SYSTEM MEASUREMENT RESULTS

MIRAKATEC® is internationally registered as a trademark





 Leumann & Uhlmann AG

Messprotokoll
WO 218870

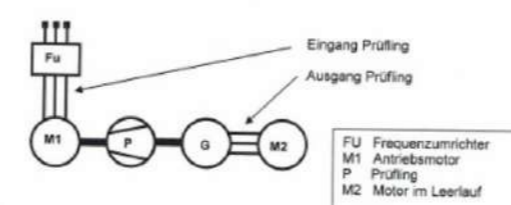
Kunde: Vullnet Miraka
Datum: 21.12.2017

Messgerät: PQ-Box 200 mit 20A Stromzangen (QS. Nr. 73)
Frequenzrichter: Danfoss, FC-302P7K5T5E55H1
Antriebsmotor: ABB, MKA 132 M-4
Belastungsmotor: ABB, M2QA132S2B
Generator: unbekannt

Leiter Messungen: Christof Leumann
Dipl. Ing. FH

Messungen: Oliver Leisi
Dipl. Systemtechniker HF


1. Messanordnung



2. Auswertung


Messpunkt	Eingang Prüfung	Ausgang Prüfung
Zeitpunkt	14:51:47,901	14:53:55,602
Spannung [V]	U zu V	310,2
	V zu W	259,3
	W zu U	274,8
Strom [A]	U	19,7
	V	22,2
	W	18,4
Wirkleistung [W]	Gesamt	6756,9
		149,7
Blindleistung [Var]	Gesamt	3414,7
Scheinleistung [VA]	Gesamt	7570,8
		768,2

Seite 1 von 2

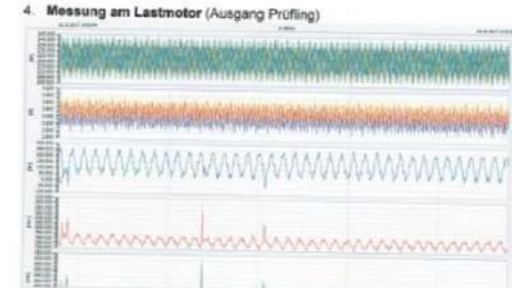


 Leumann & Uhlmann AG

3. Messungen am Antriebsmotor (Eingang Prüfung)




4. Messung am Lastmotor (Ausgang Prüfung)



Muttenz, 05. Januar 2018

Leiter Prüfstelle



Felix Leumann
Dipl. El. Ing HTL

Leumann & Uhlmann AG
Akkreditierte Prüfstelle STG 0421

Seite 2 von 2

ACHIEVEMENTS

BRUSSELS Innova
THE WORLD EXHIBITION ON INVENTIONS, RESEARCH AND NEW TECHNOLOGIES
15 > 17 NOV. 2012

Eureka! COMPETITION

EN FR NL

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Book your stand

FREE REGISTRATION

Benoit Gally
professor and author of the "Developing Innovative Organizations" book, will be present at the Brussels Innovafair trade fair for a book signing which will be held on Friday 16th November 2012 at 10.30 am on the "Université Catholique de Louvain" stand.

Sophie Racquez
founder and CEO of the "The Idea Monopoly" company and author of the "Innovation Creative" book will be present at the Brussels Innova fair trade fair for a book signing session which will be held on Friday 16th November 2012 at 11.30 am on the "The Idea Monopoly" stand.

Latest tweets

Ik heb 20 foto's op Facebook geplaatst in het album "Brussels Innova 2012" <http://nl.co/sl0bnc>

Et voici encore une interview sur Bel

ASSOCIATION OF POLISH INVENTORS AND RATIONALIZERS

DIPLOMA

INTERNATIONAL WARSAW INVENTION SHOW

CERTIFICATE

for
Q.Z.K.P.E-A.I.R.F.E (VULLNET MIRAKA),
from
INTERNATIONAL WARSAW INVENTION ASSOCIATION
for the invention
FLUID ARTIFICIAL GRAVITY ACCELERATION SYSTEM

The President of SPWiR
Michał Szota
Assoe. Prof. Eng. Michał Szota

Brussels Innova, 15 - 17 November 2012

DIPLOMA

Eureka!

THE BELGIAN AND INTERNATIONAL TRADE FAIR FOR TECHNOLOGICAL INNOVATION

to
Vullnet Miraka
Q.Z.K.P.E.- A.I.R.F.E. Albanian Inventors Researchers For Energy.

for the innovation
Fluid Artifical Gravity Acceleration System (F.A.G.A.S)

Bronze medal

THE PRESIDENT OF THE INTERNATIONAL JURY
Michał Szota
Brussels, 17th November 2012

THE PRESIDENT
Vullnet Miraka
Albania



ACHIEVEMENTS
PROTOTYPE



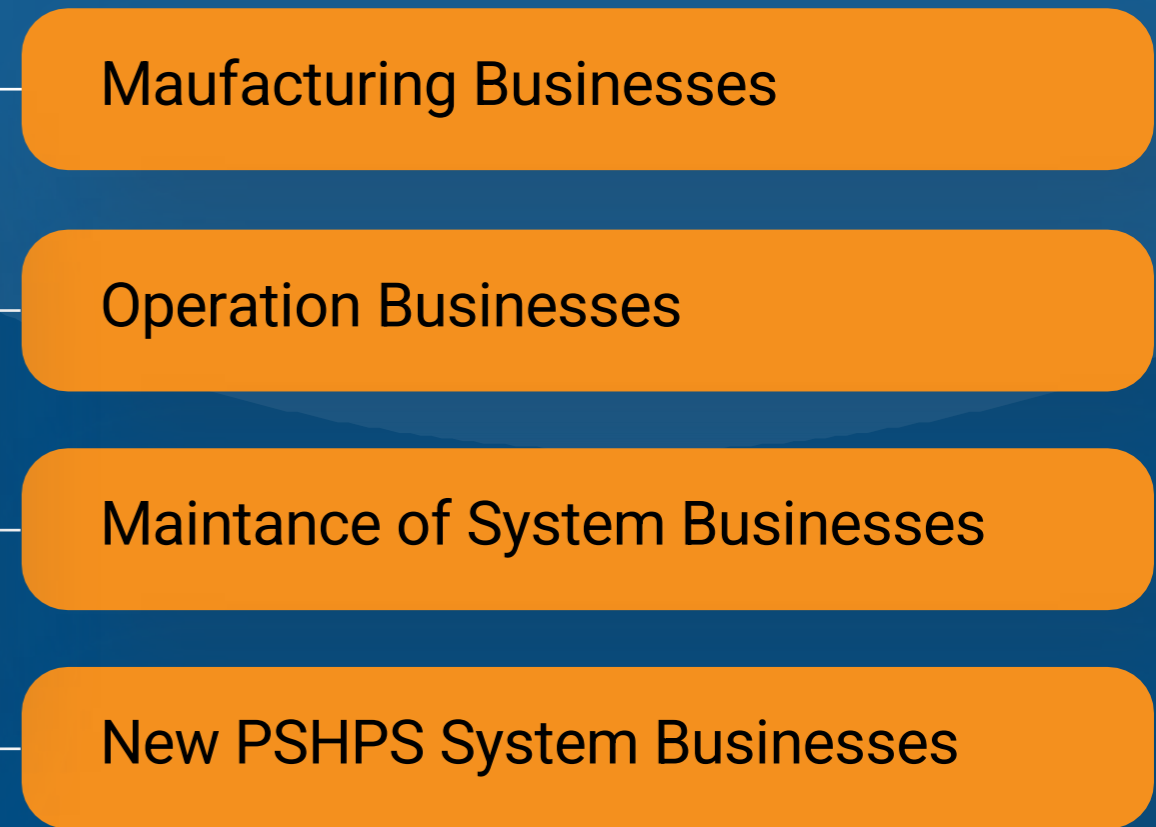
BUSINESS NETWORK

Mirakatec® Network



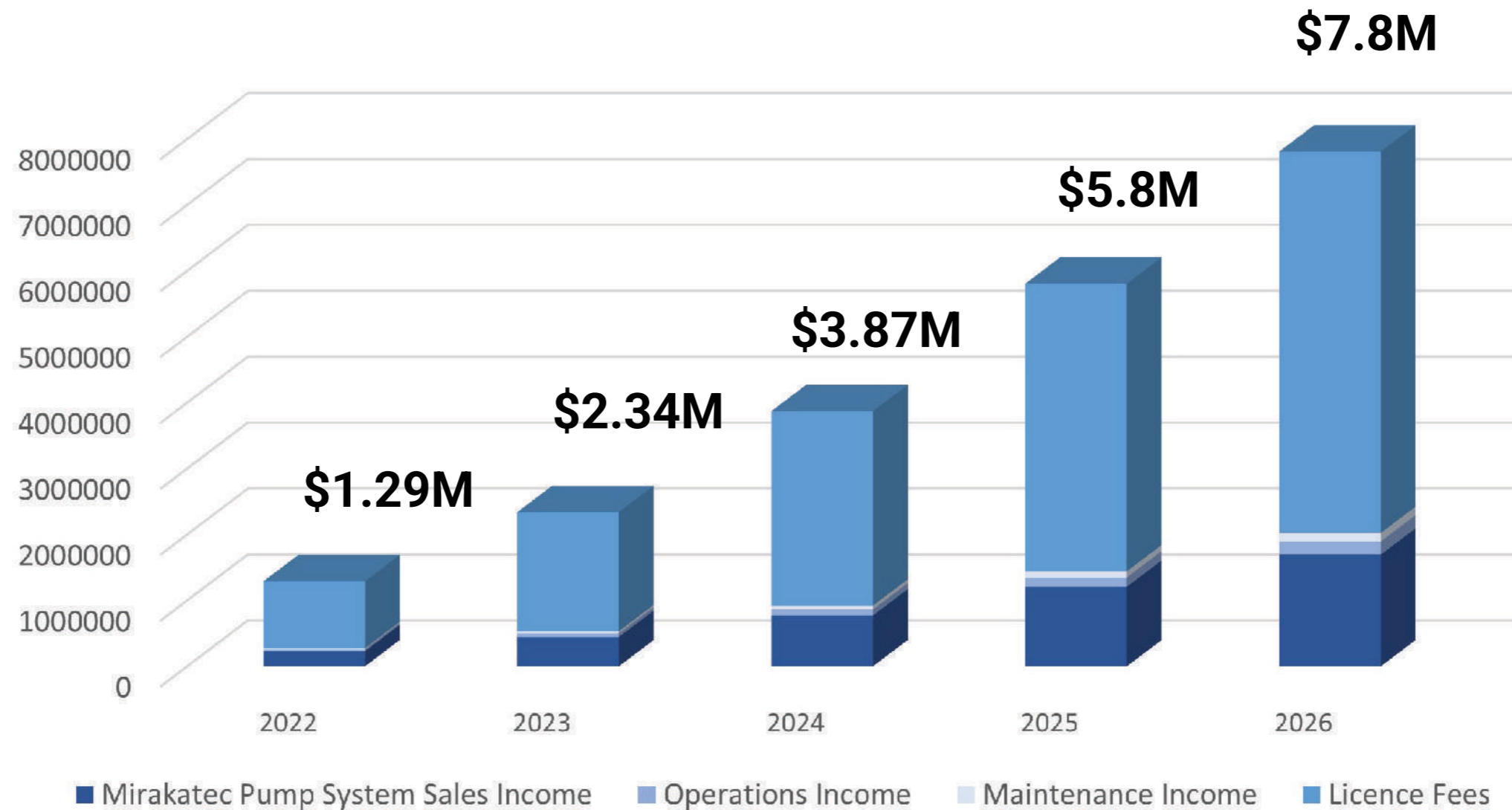
HQ Mirakatec®
R&D

Link to new Businesses



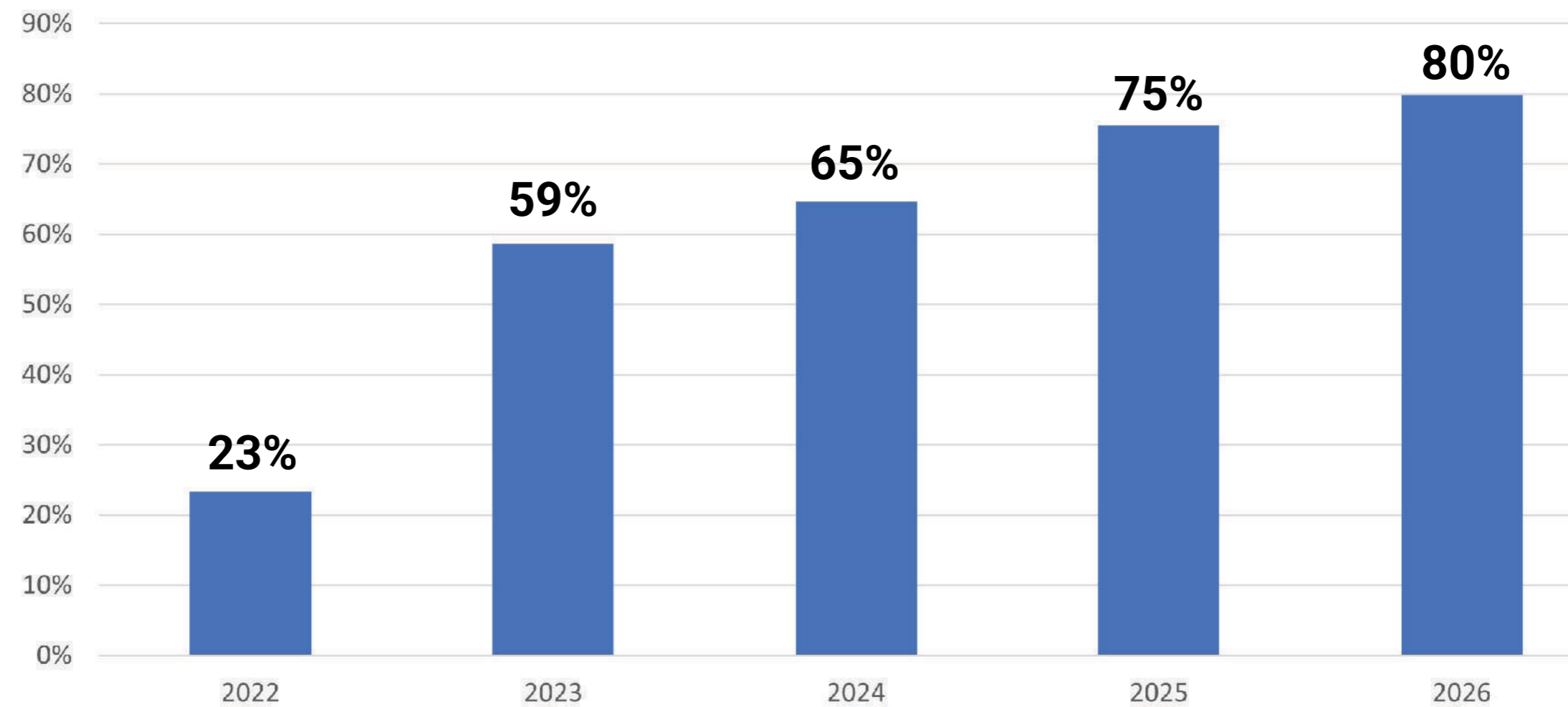
FINANCIAL

REVENUE BREAKDOWN



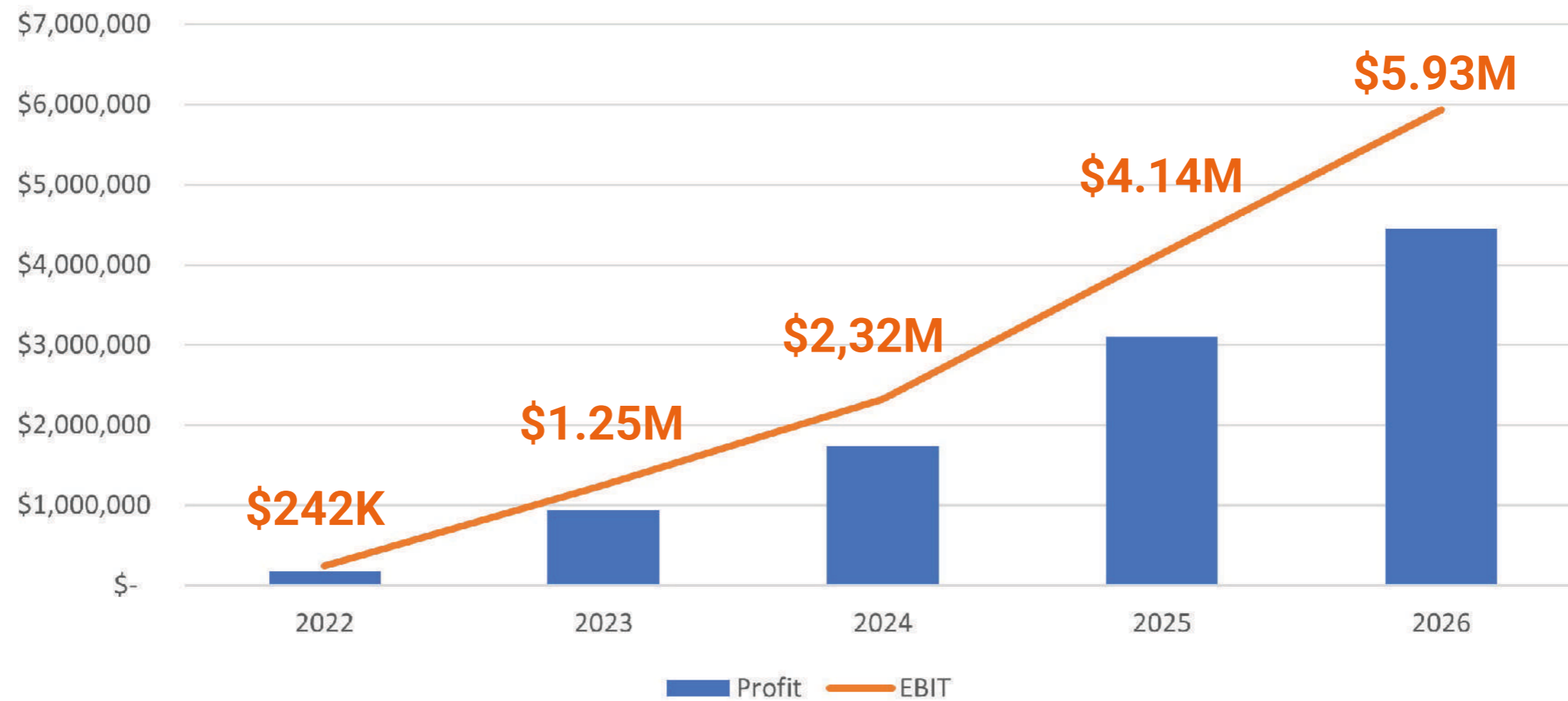
FINANCIAL

% EBITDA MARGIN



FINANCIAL

PROFIT & EBIT





MIRAKATEC

THANK YOU



vmiraka@eaglehydropower.com
hydrodynamic.science@gmail.com