



NATEL ENERGY



Natel Energy
High-Performance, FishSafe Hydropower

March, 2024

Who we are

Natel is a technology and engineering company working to support healthy rivers, promote biodiversity, and decarbonize the grid.



GIA SCHNEIDER
CEO, co-founder



ABE SCHNEIDER
CTO, co-founder



KIZZIE BROWN
CFO



GREGOR CADMAN
COO, VP Engineering



What we do

Natel specializes in data-driven hydraulic design of FishSafe™ hydropower turbines.

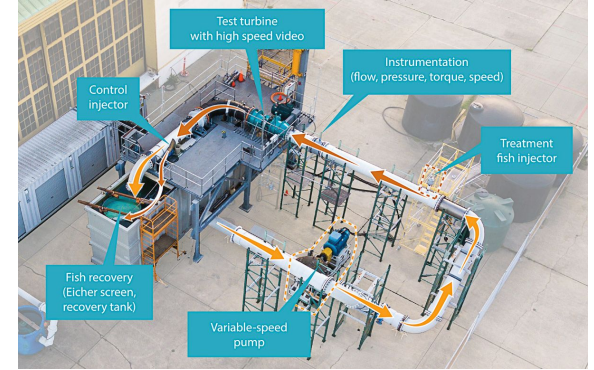
FishSafe Turbine Design



Engineering Services



Lab Testing: Scale model performance & fish passage



We partner with turbine manufacturing companies to realize our designs. We can work across the value chain to assess feasibility and support implementation of turbines designed for fish safety at hydro projects.

Our solution

Natel's patented FishSafe™ designs deliver

transformational fish safety without compromise on power.



Safe For Fish

Demonstrated 98-100% fish passage survival

High Performance

Demonstrated efficiency >90%

Cost Saving

Reduces/eliminates fish exclusion screening

Reliable

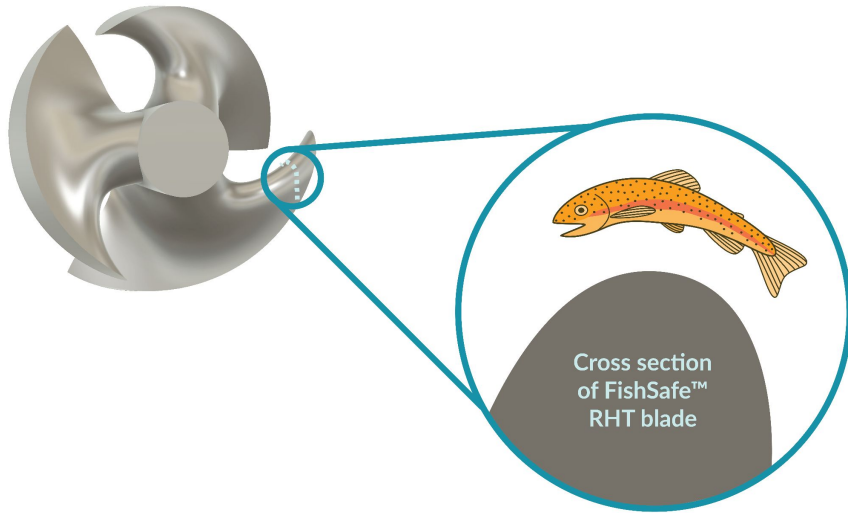
Demonstrated >97% commercial availability

Configurable

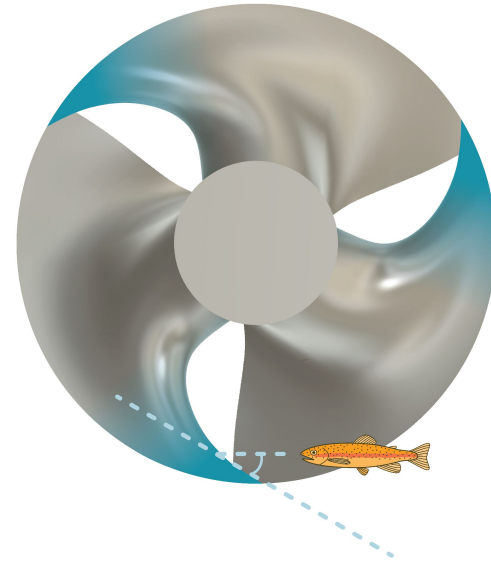
Design to fit based on site requirements

High performance, FishSafe turbine design

The core of Natel's blade design is a **thick** and **slanted leading edge**. This allows the runner to **rotate at high speeds**—maintaining conventional turbine performance metrics like high power density, high efficiency, compact form factor, and low cavitation—while **passing fish safely** directly through the turbine (eliminating the need for fine screens, bypasses or other compromise solutions).



Thick Blade (deflects fish around)



Tip Slant (reduces severity of strike)

RHT reference installations



Freedom, Maine

Freedom Falls Hydro

Capacity	35 kW
RHT Unit Size	PIT D055
Head	7 m (23 ft)
Commissioned	Dec 2019



Madras, Oregon

Monroe Hydro

Capacity	300 kW
RHT Unit Size	PIT D190
Head	5 m (16 ft)
Commissioned	Sept 2020

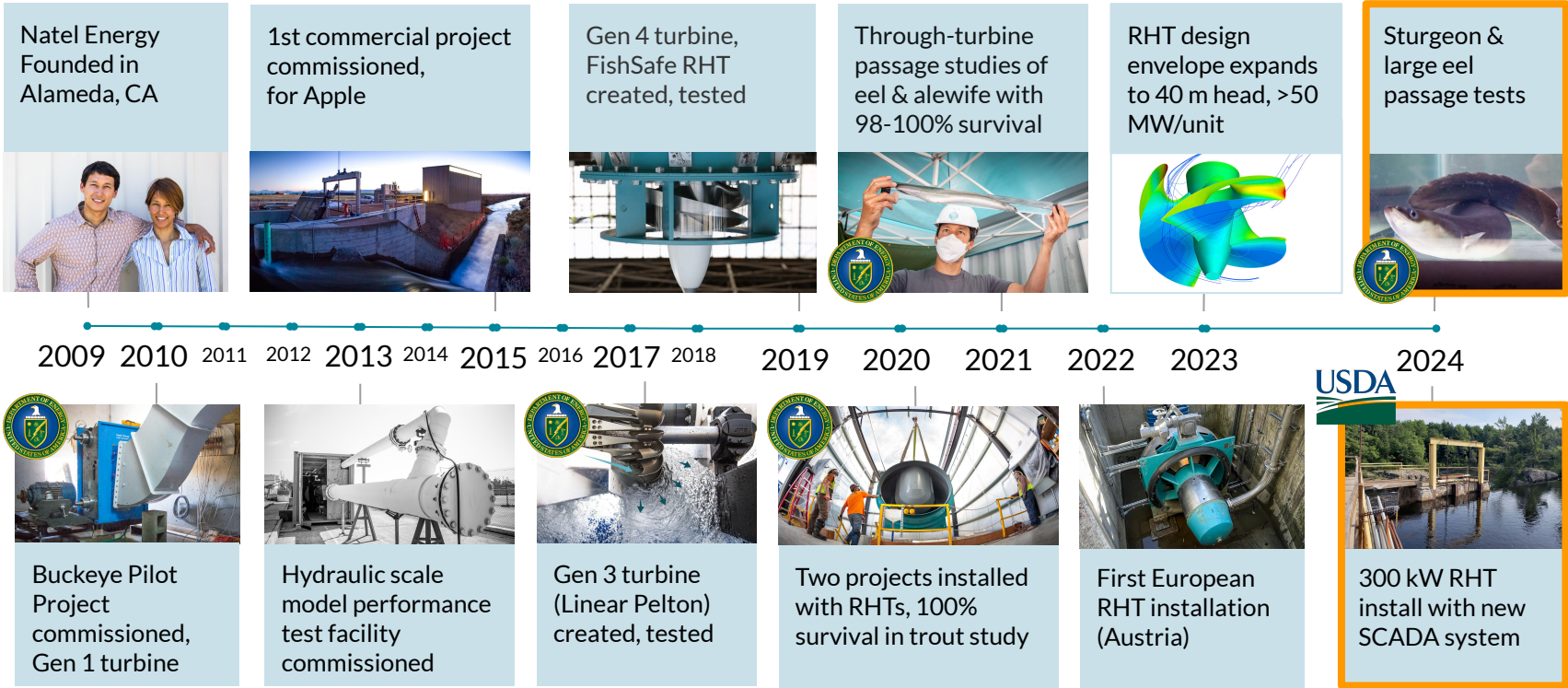



Großsulz, Austria


Sauerbrunn Hydro

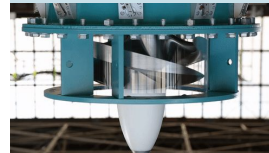
Capacity	15 kW
RHT Unit Size	BULBO D062
Head	1.9 m (6 ft)
Commissioned	Oct 2022


Breakthroughs enabled by long term investment

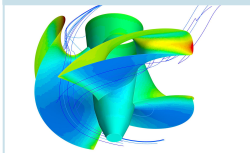



2009 Natel Energy Founded in Alameda, CA 


2012 1st commercial project commissioned, for Apple 


2017 Gen 4 turbine, FishSafe RHT created, tested 


2020 Through-turbine passage studies of eel & alewife with 98-100% survival 


2023 RHT design envelope expands to 40 m head, >50 MW/unit 


2024 Sturgeon & large eel passage tests 

2010 Buckeye Pilot Project commissioned, Gen 1 turbine 

2013 Hydraulic scale model performance test facility commissioned 

2018 Gen 3 turbine (Linear Pelton) created, tested 

2021 Two projects installed with RHTs, 100% survival in trout study 

2022 First European RHT installation (Austria) 

2024 300 kW RHT install with new SCADA system 