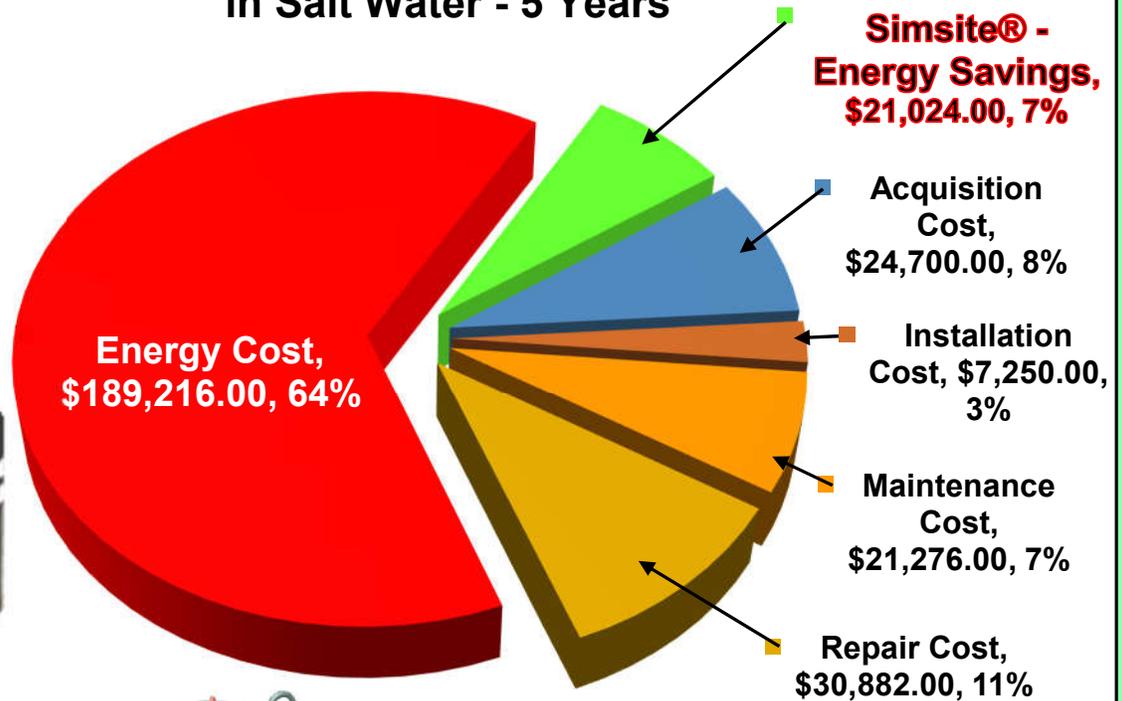


Simsite® Return on Investment (ROI) Life Cycle Costs

Simsite® Engineered Structural Composites Reduce Energy, Maintenance, and Repair Expenses!

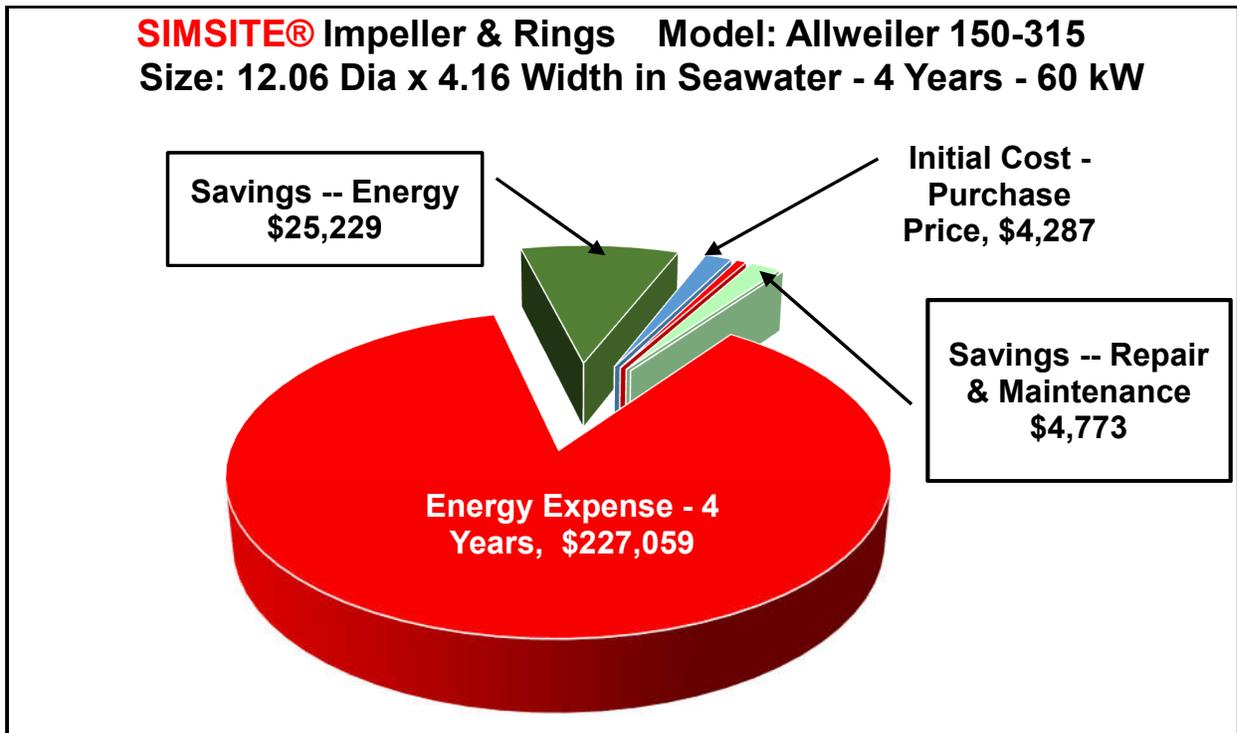
Life Cycle Costs for a 60 HP Vertical In-Line Pump
in Salt Water - 5 Years



Simsite® Structural Graphite Composite Pumps, Impellers & Pump upgrades – Light Weight, Corrosion Resistant, and Engineered for High Efficiency and Long Life!

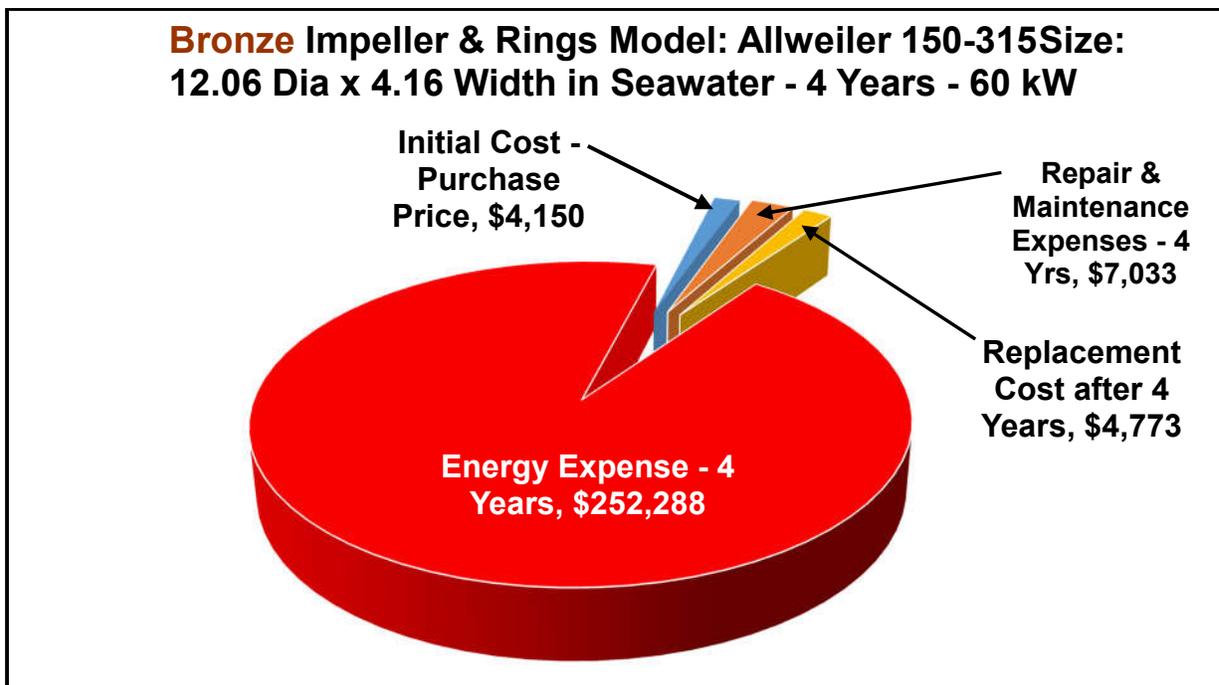
A Metallic Impeller after ONLY 3 Months of Operation in Fresh Water!

Return on Investment Bronze vs **SIMSITE®**

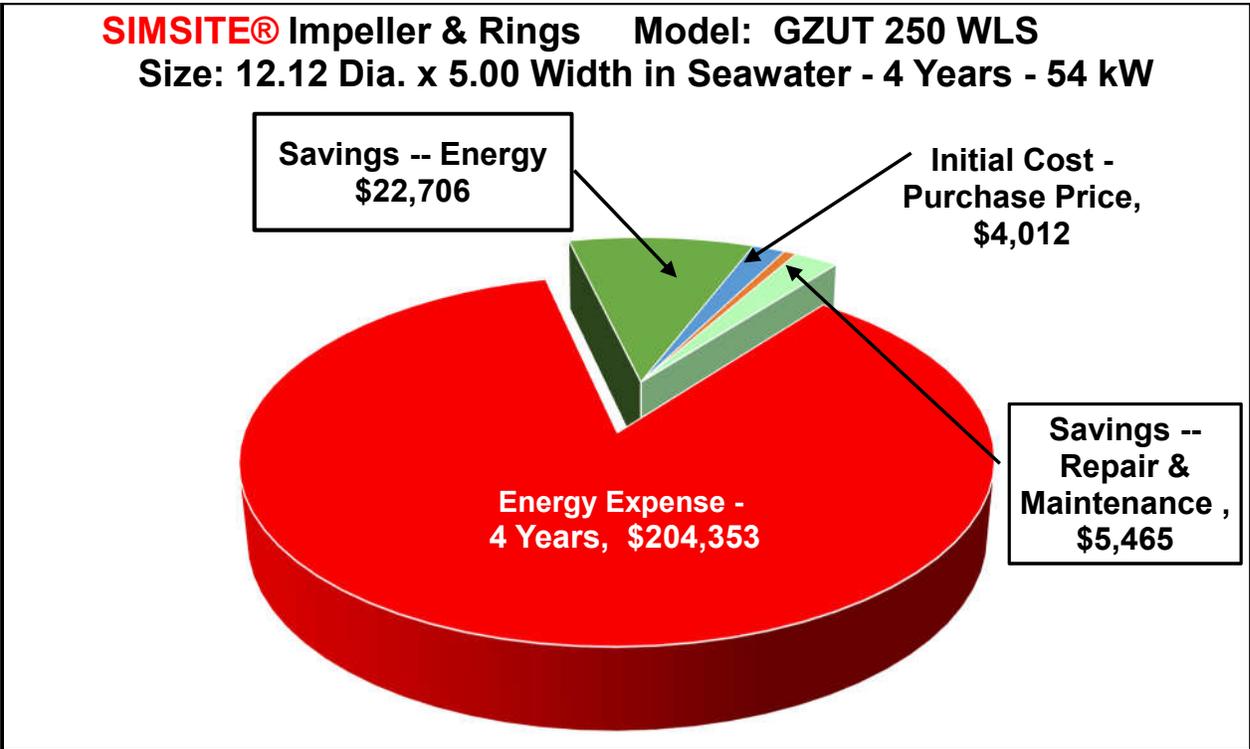


Return On Investment Using **SIMSITE®** Structural Composite –

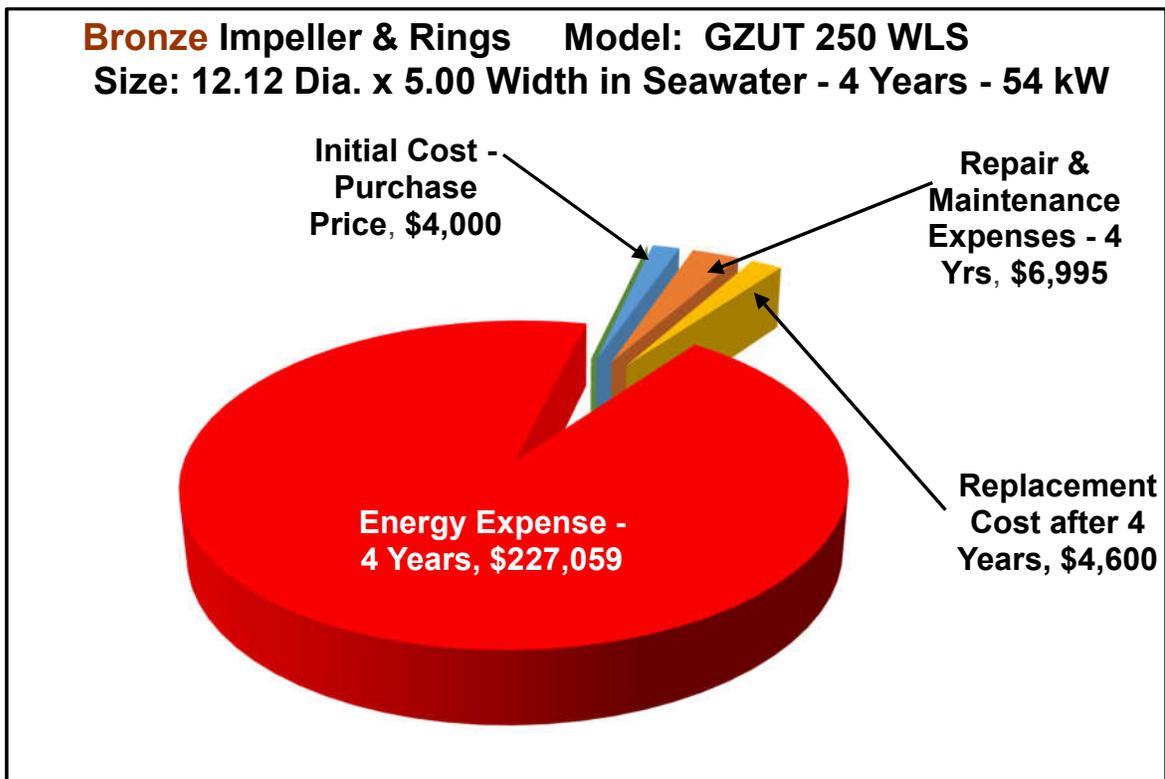
1st Year ROI = 175%



Return on Investment Bronze vs **SIMSITE®**



Return-On-Investment Using **SIMSITE®** Structural Composite –
1st Year ROI = 171%

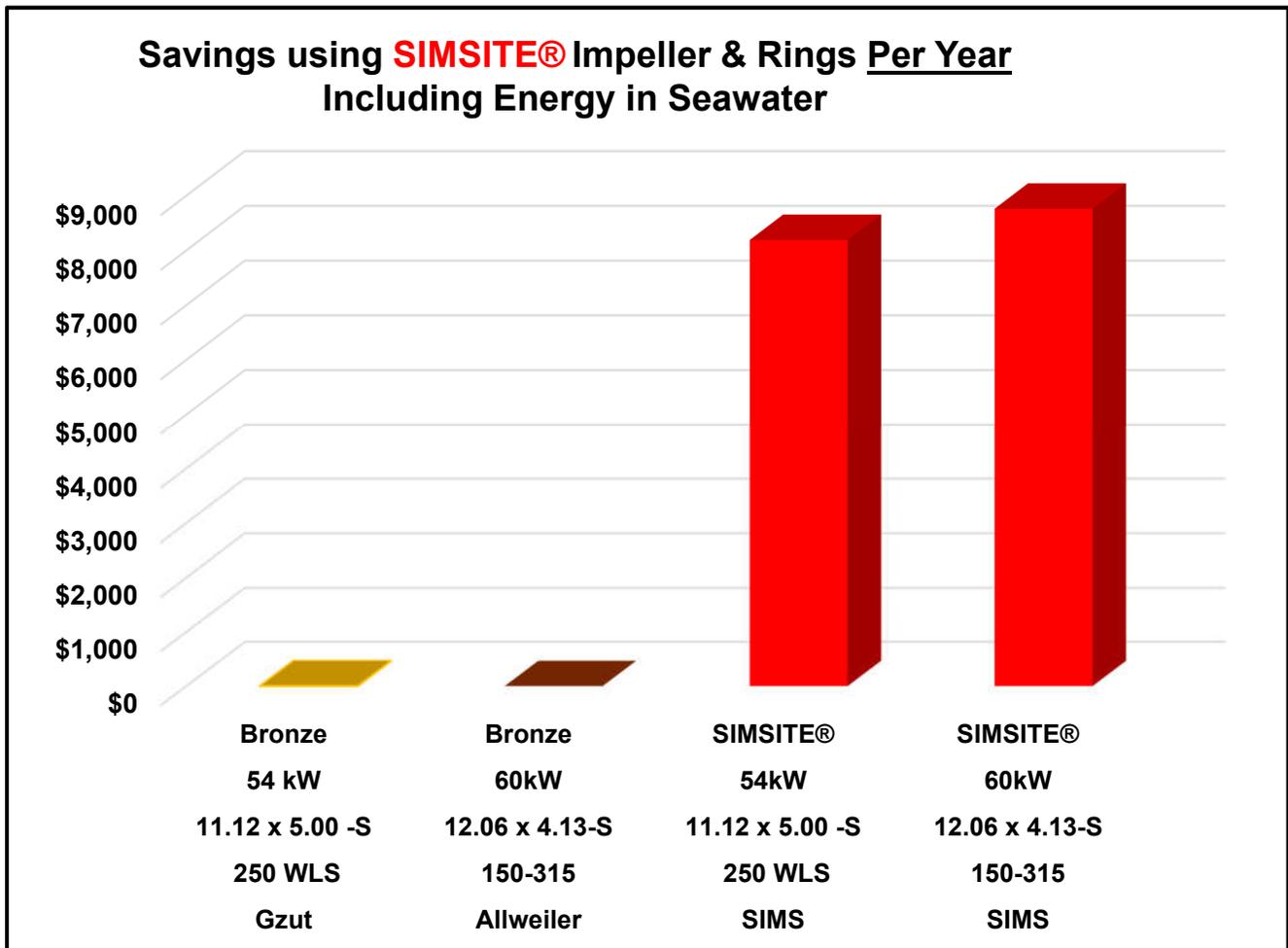


Cost Comparison Bronze vs **SIMSITE®** in Seawater

Impeller Cost Comparison Bronze vs SIMSITE® Structural Composite in Seawater over 4 Years				
Manufacturer	Gzut	Allweiler	SIMS	SIMS
Model No.	250 WLS	150-315	250 WLS	150-315
Dia x Width	11.12 x 5.00 - S	12.06 x 4.13- S	11.12 x 5.00 - S	12.06 x 4.13- S
HP	54 kW	60kW	54kW	60kW
Drawing No.			5165A1112	4632A1206
Material	Bronze	Bronze	SIMSITE®	SIMSITE®
Purchase Price	\$4,000	\$4,150	\$4,012	\$4,287
12 Months R & M	\$1,635	\$1,580	\$0	\$0
24 Months R & M	\$1,709	\$1,651	\$750	\$775
36 Months R & M	\$1,785	\$1,726	\$0	\$0
48 Months R & M	\$6,466	\$6,576	\$780	\$806
Total Expense - 4 Years	\$15,595	\$15,683	\$5,542	\$5,868

Energy Savings Using a SIMSITE® vs Bronze Impeller & Rings				
Manufacturer	Gzut	Allweiler	SIMS	SIMS
Model No.	250 WLS	150-315	250 WLS	150-315
Dia x Width	11.12 x 5.00 -S	12.06 x 4.13-S	11.12 x 5.00 -S	12.06 x 4.13-S
HP	54 kW	60kW	54kW	60kW
Material	Bronze	Bronze	SIMSITE®	SIMSITE®
Drawing No.			5165A1112	4632A1206
Energy Cost Per Year	\$56,765	\$63,072	\$51,088	\$56,765
Energy Costs - 4 Years	\$227,059	\$252,288	\$204,353	\$227,059
Energy Savings Per Year	\$0	\$0	\$5,676	\$6,307
Energy & Maintenance Savings Per Year	\$0	\$0	\$8,190	\$8,761

Savings using **SIMSITE®** Impellers & Rings Per Year Maintenance, Repair & Energy Savings in Seawater



ADVANTAGES OF **SIMSITE®** IMPELLERS & PUMPS

SUBJECT	BENEFIT OF SIMSITE®	REASON
PUMP PERFORMANCE	BETTER PERFORMANCE HIGH EFFICIENCY	<ol style="list-style-type: none"> 1. Superior Engineering Design 2. 100% Machined (inside & outside) on 5-Axis CNC machines. 3. Smoother Vane Surfaces. 4. Self-Lubricating Surfaces. 5. Less leakage through Rings.
CORROSION RESISTANCE	LITTLE OR NO CORROSION (Non Corrosive in Saltwater & Sewage -- Good in Chemical Resistance)	<ol style="list-style-type: none"> 1. Phenolic / Epoxy Resin Matrix and Graphite Fibers will not corrode in salt water. 2. Simsite® is Corrosion Resistant to Most Acid and Alkaline Solutions.
ELECTROLYSIS RESISTANCE	NO ELELCTROLYSIS	<ol style="list-style-type: none"> 1. The Graphite Used in Simsite® is Non-Conductive. 2. The more Simsite® in the Pump the Lower the Electrolysis.
START UP TORQUE	LOWER AMPS LESS SHAFT DEFLECTION	<ol style="list-style-type: none"> 1. Light Weight. (Simsite® Specific Gravity is 1/6 or 15% the Weight of Bronze and Stainless and 1/3 the Weight of Titanium) 2. Always Balanced.
POWER CONSUMPTION	LOWER AMPS	<ol style="list-style-type: none"> 1. Light Weight. (Simsite® Specific Gravity is 1/6 or 15% the Weight of Bronze, and Stainless Steel and 1/3 the Weight of Titanium.) 2. Better Hydraulic Engineering Design. (Higher Efficiencies) 3. Always Balanced.
HYDRAULIC BALANCE	REDUCED HYDRAULIC FORCE	<ol style="list-style-type: none"> 1. Precision Machining - - All the vanes are within .002 inches of each other. All exit ports are equally spaced. 2. There are No Casting Imperfections.
MECHANICAL BALANCE	ALWAYS BALANCED	<ol style="list-style-type: none"> 1. Simsite® Impellers are machined on a 5-axis CNC Machines. The center-of-axis-of-rotation is in the Center of the impeller creating perfect symmetry. 2. Simsite® Impellers, Rings, & Guide Bearings will not Corrode in Salt Water and therefore will not go into an imbalance.
WEIGHT	LIGHT WEIGHT	<ol style="list-style-type: none"> 1. Simsite® Specific Gravity is approximately 1/6 or 15% the Weight of Bronze, 1/6 the weight of Stainless Steel and 1/3 the Weight of Titanium.
EFFICIENCY	HIGH EFFICIENCY	<ol style="list-style-type: none"> 1. Smoother Surfaces. 2. Precision Machining. 3. No Casting Imperfections. 4. Minimum Casing Ring Clearances. 5. Better Hydraulic Engineering Design.
CAVITATION	REDUCES CAVITATION	<ol style="list-style-type: none"> 1. Simsite® Impellers are Engineered to Reduce or Eliminate Cavitation. 2. The Simsite® Structural Composite is good against the effects of Cavitation.
NPSH (Net Positive Suction Head)	LOWER NPSHR	<ol style="list-style-type: none"> 1. Engineering Design -- The Simsite® Impeller Vanes are Engineered to Reduce the NPSHR. 2. Engineering Expertise.



1314 Park Avenue, Hoboken, N.J. 07030

(201)-792-0600; (201)-792-0606 www.SIMSITE.com

SIMSITE® Structural Composites Significantly Reduce Energy Consumption

Today, there is a tremendous amount of effort being put forth to reduce energy expenses and consumption. The DOE (Department of Energy) and the Hydraulic Institute have been working together to reduce the energy consumption of pumps, motors, and pump systems. This is where **SIMSITE®** Structural Composites can shine – they can significantly reduce energy consumption by making the operating point the Best Efficiency Point – in some cases, energy consumption is reduced, by as much as 15%, or more!

It starts with the concept of using **SIMSITE®** Structural Composites for all pump applications:

SIMSITE® COMPOSITE COMPONENTS ARE CORROSION & EROSION RESISTANT:



Corrosion, Erosion, Erosion, Cavitation, Rotor Imbalance, and Leakage between the Wear Rings, Casing Rings, & Interstage Bushings are major contributors to the loss of Pump Efficiency. Damage from Corrosion, Erosion, and Cavitation quickly destroys the metallic pump and pump parts which makes the pump inefficient and drastically increases energy consumption and performance deterioration!



Upgrading Existing Pumps with **SIMSITE® qualified structural composite components can reduce Energy in Four Major Ways:**

1. **SIMSITE®** Impellers & Rings can be Re-Engineered to operate at the Best Efficiency Point (BEP).
2. **SIMSITE®** Structural Composite Components Do Not Corrode in Seawater, or wastewater, so the pump efficiency will not deteriorate over time.
3. **SIMSITE®** Pumps & Impellers are designed with state-of-the-art CFD Techniques on 5 to 8 Axis Machining Centers to maximize Efficiency.
4. **SIMSITE®** Structural Composite Impellers & Pumps are machined from one center position on CNC Machines from solid blocks of our patented structural composite, which enables the **SIMSITE®** Impellers to be perfectly balanced – both mechanically and hydraulically, and they remain perfectly balanced for the life of the pump.

When Only The Best Will Do!

A tradition of innovation continues...

...you can achieve the ideal!



SIMS
SINCE 1919

**SIMS Pump
Valve Company**

1314 Park Avenue
Hoboken, NJ 07030
201-792-06000

www.SIMSITE.com

www.IMPELLERSTORE.com

SimsPump@Simsite.com

Simsite@Simsite.com

