

Different Technology

We believe the differences in battery technology are precisely the reason you should choose **NiMH**.

Lead Acid batteries routinely carry only a one or two year full replacement warranty, even on the reliable “twenty year” flooded batteries.

The rest of the warranty period is prorated, and most users realize this period is difficult or impossible to enforce.

First Cost Versus Total Cost of Replacement

- 2-3 Year Replacement Schedule
- Delivery Costs / Removal Costs
- Hazmat Material Disposal Costs
- Warranty Hassles
- Installation and Labor Costs.....
THREE TIMES VERSUS ONCE

Credibility

- **Exhaustive factory accelerated aging testing**
- **Stationery systems compatibility testing**
- **Beta testing at strategic partner sites**

Price / Cost

The **NiMH** product is not for everyone. NiMH is for the companies more concerned with 'life cost' vs. 'first cost'.

Most lead acid batteries purchased today:

- 5 year design life
- Fail in 2 to 4 years of service

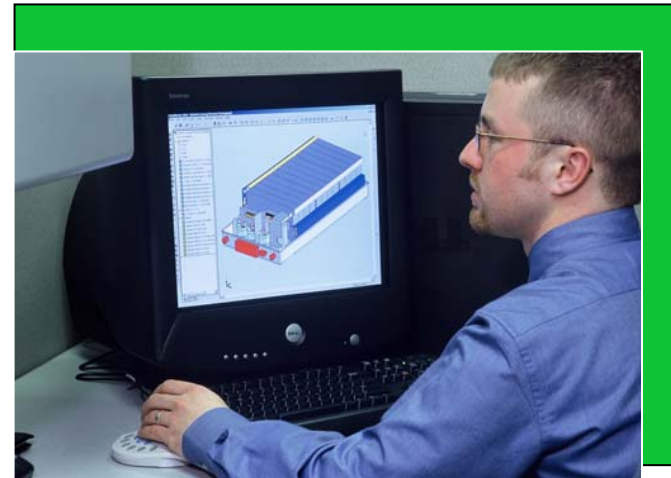
Results:

Massive and recurring cost of maintenance, change out, site reliability, downtime, and perhaps even monitoring and/or redundant strings to try to mitigate those costs and improve reliability or at least predictability.

Price / Cost

With NiMH batteries, the design philosophy eliminates those costs, and replaces them with a completely predictable and normally lower monthly or quarterly billing for the entire 10-year life of the battery system.

This includes all maintenance, 7 x 24 services or visits, and any / all parts change outs ever required within the warranty period.



Reliability

- **The problem with the vast majority of stationery batteries is not that they do fail, but rather how they fail.**
- **Most batteries are sealed or VRLA (Valve Regulated Lead Acid).**
- **Since these cells are sealed, water cannot be added.**
- **The failure mode then is dry-out which results in an ‘open-circuit’ on the battery string.**

Reliability

- **A single cell going 'open-circuit' makes the entire 50 - 200 cell battery string useless since it can no longer conduct electricity.**
- **Just as bad, there is no definitive way to predict when that will happen in a sealed cell.**
- **High cycling or temperature accelerate the condition.**



Reliability

Like expensive and space-consuming flooded cells, NiMH technology has been proven to be highly reliable, completely predictable, and can even tolerate constant cycling and elevated temperatures.



think of NiMH as an improved flooded 20 year battery in an attractive compact sealed package.



Service

Conventional batteries wear out in 2 - 4 years and must be frequently replaced. Since they are not predictable, they must be inspected & tested several times a year.

Soft lead terminals, acid, and hydrogen make service issues harder. Monitoring can ease service visits slightly but is expensive.

Service

Service requirements for NiMH are very different from conventional lead acid batteries.

NiMH design eliminates virtually all change outs and site maintenance for the full ten year warranty period.

Our built-in 7 x 24 real time monitoring insures total reliability and response -- should any ever be needed.



Monitoring

NiMH monitoring system are extremely flexible.

- Arrange remote 7 x 24 monitoring of your system**
- Local data logging if firewall issues require**
- Local communication**
- Web-enabled monitoring & data handling**



Warranty / Design Life

Since lead acid batteries are unpredictable and short-lived, the industry has come up with an endless series of design life vs. service life vs. warranty marketing schemes, many tied to cycle monitoring for warranty fulfillment. Prorated warranties are everywhere.

With NiMH systems warranty games can be reduced

Safety

NiMH is not a Lithium-based product and thus, has no such explosion potential. NiMH has no significant hydrogen generation potential (like conventional LA batteries) and does not need hydrogen monitoring equipment.

NiMH possibly could be the safest UPS energy storage product out there under normal operating conditions:

- Ø No Lead
- Ø No Acid
- Ø No Lithium
- Ø Minimal Hydrogen potential

It is certified to be carried by airplane.

Limited Product Line

NimH are best suited for mission critical users (data centers, telecom, critical process industry, renewable storage, etc).

We work with critical users and their engineers to provide specific products for specific engineered applications.



Market Opportunities

- **Longer Run Time – No Generator**
- **Low Limits on Space or Weight**
- **High Cycling (Peak Shaving)**
- **Environmental Concerns**
- **Zero Explosion Hazard**
- **High Ambient Heat Tolerance**



Market Opportunities

- **OSP – Systems Include Controls**
- **Need to Monitor / Monitoring System Included – Highly Compatible**
- **Flywheel Alternative**
- **Long Calendar Life (15 years)**
- **Low Installation Costs**
- **Limited Maintenance Requirements**

RENEWABLE ENERGY OPPORTUNITIES

- LONG CYCLE LIFE
- EVEN LONGER WHEN DESIGNED IN PARALLEL
- ENVIRONMENTALLY BENIGN
- NON HAZARDOUS TO SHIP VIA GROUND, AIR, OR TRAIN/
- NO HAZMAT COSTS OR RECYCLING REQUIREMENT
- LIGHTER IN WEIGHT/RACK MOUNTED CAN BE INSTALLED BY ONE PERSON
- CAN BE MONITORED VIA AN INTERNET CONNECTION TO AVOID UNNECESSARY TRIPS TO REMOTE LOCATIONS



Thank you

Any Questions?

