**TECHNOLOGY**

What are smart motors?

SOFTWARE-CONTROLLED SWITCHED RELUCTANCE MOTOR WITH VARIABLE-FREQUENCY DRIVE (VFD)

REAL-TIME CLOUD-BASED MONITORING AND CONTROL

Smaller motors offer greater relative savings

OAK RIDGE NATIONAL LABORATORY (ORNL) assessed a 10 hp smart motor on a chilled water pump application at the Land Port of Entry in San Ysidro, California. A concurrent National Renewable Energy Laboratory (NREL) assessment of a 1.5 hp motor took place on condenser fans in a refrigeration system at a Walmart in Lakeside, Colorado. Technology was provided by Software Motor Company.

**M&M**

Where did Measurement and Verification occur?

**RESULTS**

How did the 10 hp smart motor perform in M&M?

MORE EFFICIENT UNDER ALL CIRCUMSTANCES

4% avg. savings compared to a premium-efficient motor & VFD.

33% for 1.5 hp motor compared to a standard-efficient motor & VFD (NREL assessment).

O&M INSTALLATION COMPARABLE

Reduced maintenance. Drop-in motor replacement.

REMOTE MONITORING & CONTROL

Possible but not tested. NREL assessment showed successful fault-detection and control.

Immediate Payback When Replaced at End-of-Life

44% less expensive than a code-compliant premium-efficiency motor and VFD

**DEPLOYMENT**

END-OF-LIFE REPLACEMENT

Also consider retrofits for: fixed-speed motors; motors < 5 hp; and applications with lower installation costs, such as motors that control fans.