

**High Efficiency Refrigeration Evaporator Fan Motors  
Beyond ECM**

Date reviewed: 10/03/2016

Description of Technology		Energy Saving Opportunity	
Fractional Hp, permanent magnet synchronous AC motor by QM Power who is the sole source manufacturer rolling out the product. The initial market sector target is refrigeration reach in case evaporators fan motors ranging between 9 to 12 W outputs. Planned second phase late 2016 will expand to walk in cooler motors. In 2017 QM Power plans to offer motors for HVAC applications. It is currently the most efficient fractional Hp motor for use in such purpose.	Sector(s):	<input type="checkbox"/> Residential	
		<input checked="" type="checkbox"/> Commercial & Industrial	
	Applicability Criteria:	Refrigeration, Walk-in coolers late 2016, HVAC 2017	
	Efficiency Improvement:	Up to: 70% shaded pole (SP) and 30% ECM plus additional compressor savings.	
	Energy (%) Savings Potential:	Ranges depending upon baseline motor. See above.	
	Demand (%) Reduction Potential:	Up to: 70% SP, 30% for ECM	
Strengths		Weakness	
<ul style="list-style-type: none"> <li>Quick install: Motors and fans packaged together as a drop in replacement with universal mounting features.</li> <li>Multiple fan blade configurations available to match base case airflow rates.</li> <li>More reliable: Built to an IP65 rating (particle sealed and water splash resistant) to reduce moisture and dust related failures. Warranty twice ECM levels.</li> </ul>		<ul style="list-style-type: none"> <li>Sole source provider.</li> <li>Currently product line limited to refrigeration reach in cases.</li> <li>Technical expertise required during an audit in determining the proper fan pitch to match airflow.</li> </ul>	
Third Party Analysis/ Previous MTAC Reviews		Suppliers Known to MTAC	MTAC Status
<ul style="list-style-type: none"> <li>Oak Ridge National Laboratories</li> <li>Air Movement and Control Association (AMCA)</li> <li>San Diego Gas and Electric Co</li> </ul>		QM Power    	Acknowledged to have energy savings potential and recommended to individual PA for their own EE program consideration.
Market Development Issues			
Cost:	\$130/fan-motor unit		
Market Risk and Barriers:	Modestly cost effective upgrade for ECM alone.		
Time to Market:	Currently on market		
Simple Pay-back: (Years)	Shaded Pole (SP)-1.6 ECM-11.4 70% SP/30% ECM - 4.5		
			