Problem Statement

- Pentair Inc. is looking to transition from AC to DC motors to drive their pumps for a more environmentally and economically conscious alternative
Project Goals

• Research and test potential motor technologies

• Report to Pentair our findings and our recommendation for which motor they should select to use in their water pumps
Organization of Team

**Sponsor**
Pentair Inc.

**Advisor**
Phil Lewis

**Team Leader**
Jarrett Oberg

**Technical Team**
Eunice Cachero
Sunho Lee
Khalid Matariyeh
Andre Colmenares
Jarrett Oberg

**Business Team**
Lisa Jackson

**Recording Team**
Tejash Patel
Veronica Hannink
Progress

• Research
  – DC motor types
    • Switched reluctance
    • Permanent magnet
    • Brushless vs. Brush
    • Servo
    • Stepper
  – Alternative energy sources
  – Controllers/Drives
  – Marketing impact
Progress

• Motor Decisions
  – Switched Reluctance
    • New technology, needs additional investigation
  – DC Servo
    • Very controlled performance to meet client’s request, popular motor
  – DC Brushless
    • Most popular potential solution, high availability
Challenges

• Encountered:
  – Finding a motor with comparable performance characteristics to those already in use
  – Finding controller for motor

• Anticipated:
  – Finding a specific model
  – Developing a plan for testing
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<td>Find motors (specific models)</td>
<td>Meeting w/ Pentair – motors will be purchased</td>
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<td>Week 9</td>
<td>Develop Test Plan</td>
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<td>Investigate market for best value of motor</td>
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<td>Week 15</td>
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Questions?