

**Statement of Philip Damiano  
Chief Operating Officer  
Velcro Group Corporation**

**Hearing to receive testimony on bills to promote energy efficiency and alternative fuel  
vehicles before Senate Committee on Energy and Natural Resources  
June 9, 2011**

Thank you Chairman Bingaman, Ranking Member Murkowski, and members of the committee for the opportunity to testify today. My name is Philip Damiano, Chief Operating Officer of Velcro Group Corporation. Prior to joining the Velcro Companies, I was CEO of Idea Paint, President of DYMO, a Newell Rubbermaid Company, and co-founded of several start-up companies. I would like to share with you what our company has experienced while striving to improve our energy efficiencies.

I would also like to thank Senator Shaheen for inviting me to testify today and for putting forth a bill striving to help domestic manufacturers remain competitive amid high energy costs in New England.

Velcro Group Corporation is a global corporation with numerous entities. The experience that I would like to share with you is that of our domestic company Velcro USA Inc. (Velcro). Velcro is over 50 years old and employs over 750 people at its locations in New Hampshire, Michigan, and Arizona. The company is headquartered in Manchester, NH with manufacturing facilities in Manchester and Somersworth, NH. These two locations produce vast quantities of fastening systems that are used in a multitude of markets. Some of our key markets include medical, government and military, personal care, transportation, and retail. Our identity as a domestic manufacturer is very important to us and our culture reflects this pride. This desire to maintain domestic manufacturing jobs has been a key factor in our decision to invest and pursue increasing environmentally sound and energy efficient practices.

Three motivators are the driving forces in the decision to head in this direction.

- Rising costs of manufacturing
- Maintain competitiveness while committing to domestic manufacturing jobs
- Act as an environmental steward and do our part to keep our natural resources as minimally impacted as possible

Most textile manufacturing left the area a long time ago due to higher labor and overhead costs. High cost of energy in New England is a big factor. However, it has always been important to the Velcro Companies to maintain manufacturing in New Hampshire. The fastening market is highly competitive and we are routinely challenged by non-domestic products that enter the market at a lower price point. Therefore, cost management is essential.

Over 20 years ago, Velcro recognized the need to address the rising cost of electricity in NH and implemented a small-scale cogeneration system to power the textile manufacturing operation. With increased pressure to reduce operating costs and the emerging need to reduce environmental impacts, energy efficiency and conservation became a priority within the organization. In the late 1990's and the midst of electric utility deregulation, the need and complexity to manage energy cost was a growing concern to Velcro. In 1998 Velcro hired a full time energy professional to focus on energy management for the US operation. In 2000, a full-scale natural gas fired cogeneration system was placed in service at the Manchester location. Since this time, Velcro has identified and implemented countless energy efficiency and conservation measures that have yielded substantial operational cost savings to the business as well as considerable reductions in environmental impacts. Consistent with a focus on energy efficiency, Velcro implemented an Environmental Management System (EMS) and achieved

registration to the ISO 14001 standard in 2003. The EMS enables the business to manage continuous improvement activities for all environmental aspects and impacts, with energy conservation and reduction measures being key elements of this program. As you can see, the attention to energy and our environment is not a fleeting fad, but has been “woven” into our business. The following is a brief description of our NH facilities and an outline of some of the key measures that have been implemented.

### **Manchester Facility:**

Established in the 1960's, our Manchester Facility includes approximately 450,000 sq. ft of building space on a 26 acre campus. This location supports Textile and Plastic manufacturing operations and is also the hub of the Velcro Companies Innovation and Technology Center (R&D). Key measures include:

- Co-generation Plant provides 100% electric and thermal energy to Manchester campus. Dependent on seasonal loads, system efficiencies have exceeded 80%, twice the efficiencies of public utilities.
  - Natural gas fired combustion turbine outfitted with Low NOx combustion technology provides electric power while minimizing NOx pollutants
  - The turbine is coupled with a Heat Recovery Steam Generator that recovers the waste heat from the turbine and converts this energy into useful steam. This steam is utilized for
    - Thermal process loads (dyeing, coating).
    - Domestic hot water
    - Snow melt system for campus sidewalks
    - Space heating
    - Space cooling for textile plant: a 500 Ton Steam Fired Absorption Chiller was installed in 2007. Prior to this system being installed, an electric chiller was utilized and it only produced 250 tons of chiller water. The result of this installation is a net reduction in electrical use during the summer cooling season and an increased overall cycle efficiency of the co-gen plant. Basically, the chiller water is produced by heat from the exhaust that was previously released to the atmosphere.
- Dye process – process water and heat recovery. Noncontact cooling water utilized to “cool down” dye process is captured in storage tank and re-used for next “fill” cycle. Heat from dye process wastewater effluent is recovered through a heat exchanger to pre-heat city water supply to dye house.
- HVAC Systems – textile plant: retrofit central systems with new technology. All new and retrofit systems utilize economizer feature, variable frequency drives and digital controls.
- Lighting – All areas are outfitted with high efficiency lighting and are continuously being updated to take advantage of the latest technology including dimmable ballasts, daylight harvesting, etc. The majority of break rooms, conference rooms and restrooms lighting is controlled by occupancy sensors.
- Premium Efficiency Motors – All new and replacement motors for production and facility equipment and systems are specified to be premium efficiency.
- Variable Frequency Drives – VFD's are utilized for the majority of new and retrofitted equipment. Most production equipment utilizes VFD's for process control as well as all fans and pumps for HVAC systems.
- Compressed air systems – upgraded to include new high efficiency air compressors with VFD's and demand management controls and metering.

- Roofing – All roofing systems replace with white reflective TPO membranes to minimize heat gain.

### **Somersworth Facility:**

Our Somersworth Facility includes approximately 430,000 sq. ft of building space on 242 acres. This location supports Textile, Plastic and Non-Woven manufacturing operations. The original facility was built in 2000 and an expansion project completed in 2009 doubled the size of the factory to accommodate business growth plans. The design of the building expansion considered total cost of ownership. Building envelope, components, finishes as well as mechanical and electrical systems were all evaluated and selected with energy and operational costs considerations. An energy consultant was engaged to compare and evaluate alternate technologies and decisions were made based on ROI. Some of the key elements include:

- Lighting:
  - Original building: All lighting fixtures installed in original building were replaced with High Efficiency lighting (T-5) fixtures (30% reduction in electricity used for lighting)
  - Daylight harvesting: Skylights have been installed in specific locations to take advantage of natural light. High Efficiency Lighting is controlled based on available daylight.
  - Occupancy sensors are utilized where appropriate such as conference rooms, common areas, and restrooms
- Dye process – same water and heat recovery as Manchester plant. Also Somersworth dye operation utilizes a High Efficiency Direct Contact Hot Water Heater (90%+ efficiency) to heat process water to desired temperature.
- Central Chilled Water – HVAC: The new building addition is air conditioned to maintain a stable process environment. High Efficiency Centrifugal Chillers with VFD's are the heart of the system. All fans and pumps are driven with VFD's to minimize energy use. A "free cooling" heat exchanger was also incorporated into the design to eliminate the need to run the electric chillers when the outside air temperature is below a certain point (winter use).
- Central Chilled Water and Glycol – Process: Plastics molding process lines are serviced by a central chilled water and glycol system instead of individual units for each line. Lower operational cost and system redundancy are key benefits.
- Roofing – All roofs include high reflective white TPO membrane to minimize heat gain.

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- Once "low hanging fruit" (lighting, motors, drives, etc.) has been addressed, more effort is required to pursue specific measures. Opportunities to reduce energy use in the manufacturing process require a higher level of engineering and expertise. These efforts are usually more costly with expectations of shorter payback periods as compared to a building solution. Incentives from public utilities and/or other sources can sometimes help to close the financial gap and make unattainable projects a reality.
- Resources are focused on operation and production vs. energy opportunities. Energy is a significant part of COGS. Assistance from subject matter experts that can help us develop and implement solutions is equally important.
- Most public programs / technologies are focused on commercial solutions vs. industrial/manufacturing.
- Rising Cost of Electricity (NH) / Volatile Energy Market (NG, Oil)

### **Current Projects:**

- Continued lighting projects – office space, Manchester warehouse
  - Cogeneration Opportunity at Somersworth Plant – evaluating opportunity
  - Comprehensive Energy Audits completed in August 2010 for US locations. Audits funded by the New Hampshire Department of Resources and Economic Development's Business Resource Center as an account of work sponsored by an agency of the United States Government (ARRA funding).
    - Opportunities identified covered a broad range, but most require additional investigation. Estimated payback periods ranged from 1 year to over 30 years, with the overall average above 12 years.
    - Opportunities worth being pursued include:
      - Alternate Plastic Resin drying technology (3-4 year payback)
      - Boiler controls / efficiency improvements at Somersworth Plant (3-4 year payback)

Members of the committee, as you can see Velcro has taken an active role in increasing our energy efficiencies in an effort to maintain our competitiveness through cost reduction to maintain manufacturing jobs in NH. Included are continuous improvements of manufacturing and facilities equipment and incorporating the latest technology in environmental and lighting control. When we expanded our capacity, we used those lessons learned and made the decision to incorporate cutting edge technology. We see this as not only the path forward to mitigate the rising costs of energy but also a way to stay connected with the interests of our workforce, continue our commitment to domestic manufacturing, and to decrease our impact on the environment. Legislation similar to that proposed could act as a catalyst to move forward with many energy savings projects.

I would like to thank all members of the committee for allowing me to share the experiences that our company has had in regards to energy efficiency efforts and again thank Senator Shaheen for the invitation and sponsoring this bipartisan bill. I am sure that with congressional support many more corporations would take the view that we have and modify the appropriate business practices.