IBM Testimony to House Natural Resources and Energy Committee 3/3/2015
H40

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IBM wishes to thank the House Committee on Natural Resources and Energy for our opportunity to provide testimony on H40. My name is Daniel Tukey. I am responsible for IBM's Energy Policy Programs.

IBM's Facilities and Electric Usage

- IBM is a 24-hour 365-day facility that develops and manufactures semiconductor products and delivers those products throughout the world
- Safe, reliable, cost-effective base-load power is critical to IBM's success
- IBM is a "Transmission Class" customer of GMP, IBM buys power at 115,000 volts from the grid. IBM owns all the infrastructure and completes all the steps necessary to deliver the electricity to an outlet at 120 volt
- In 2014, IBM paid approximately $37 million for electricity purchased from GMP
    - IBM spends roughly $3.5 million annually to maintain its distribution system

Measures IBM has Taken to Reduce its Electric Costs

- For 20+ years, IBM has improved productivity and reduced cost, specifically electricity costs through continuous management and engineering attention
- In the past 4 years, IBM has implemented 412 energy conservation projects
    - The projects have saved approximately 100,600 MWH of electricity and 280,000 MMBTU's of fuel with an estimated cost avoidance of $12.7M
- Through the State of Vermont's Self Managed Energy Efficiency Program, IBM spends and implements on average $1 million annually towards on-site efficiency projects
    - IBM has participated in the SMEEP since 2009
    - The facility would like to continue the SMEEP upon transitioning to GlobalFoundries
- IBM has an internal smart grid that has been used to create peak load reductions that not only helps IBM, but provides benefit to GMP customers and to Vermont by helping avoid new transmission upgrades
    - In 2006, IBM reduced its peak load consumption by ~10 MW, while at the same time, increased manufacturing output
- IBM has won numerous awards throughout the duration of its energy management and efficiency
    - Vermont Governor's Environmental Excellence Awards 1993 – 2014
    - National Pollution Prevention Roundtable 2007, 2009-2014
    - Association of Energy Engineers—Best Overall Energy Project in New England 2012
    - EPA Climate Leadership Award 2012

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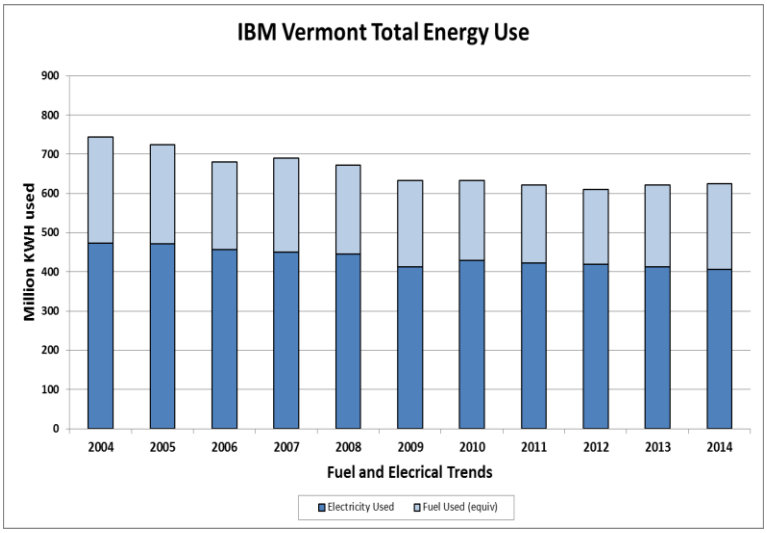


For the years 2004 to 2014

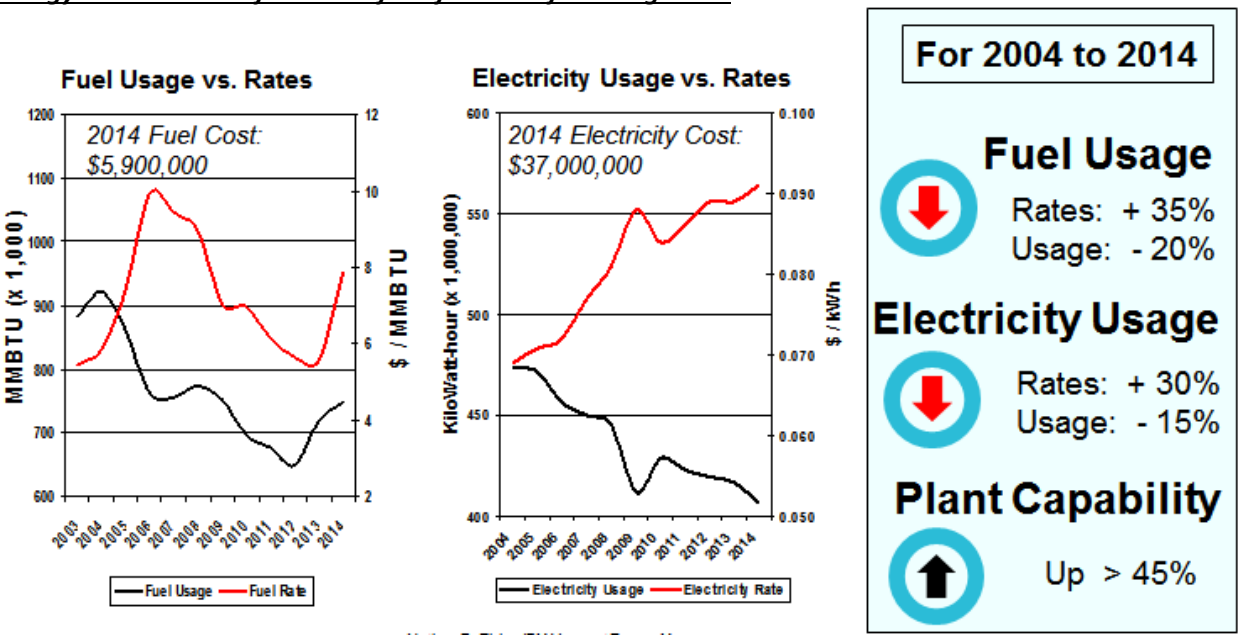
Total Energy Use
Reduced 16%

Manufacturing Capability
Increased 45% during this time

Why H.40 and Electric Rates are Important to IBM?

- 1% increase in electricity bill = $370,000
- Energy significantly impacts the production costs of our products
- IBM Vermont competes on a national and international level and therefore faces stiff competition from facilities that pay significantly less for electricity than we do in Vermont
- Increased electric unit costs have a direct and significant impact on our present and future competitiveness and profitability

Energy Costs account for 6.0% of Wafer Manufacturing Costs



Summary:

In general, IBM is supportive of H40 because of the potential rate impact of continuing the SPEED program, and because of the innovative mechanisms used to control costs associated with additional distributed generation. However, there are several areas where we feel the bill can be improved, specifically in the areas listed as below:

Areas of Concern in H40

- Alternative Compliance Payment (ACP)
- Recommended Changes:

  Sec. 3. 30. V.S.A. §8005 (a)(4)(A) subsection (a)(ii)
  - (ii) distributed renewable generation and energy transformation requirements—$0.06 per kWh.
    - Lower payment from $0.07 per kWh to $0.06 per kWh
    - This change provides cost containment, without altering the utilities % goal requirements in Tier I or Tier II
- Tier I: Required increases of total renewable energy required (55% by 2017 to 75% by 2032)

- Recommended Changes:
    - Sec. 3. 30. V.S.A. §8005 (a)(1)(B)
        - (B) Required amounts. The amounts of total renewable energy required by this subsection shall be 55 percent of each retail electricity provider's annual electric sales during the year beginning January 1, 2017, increasing by an additional four percent each third January 1 thereafter, until reaching 75 percent on and after January 1, 2032.
            - Annual increase of 1.33% to 4% increase every 3-years
            - Less reporting requirements
            - Flexible power planning
            - Utilities still to meet % goals, while avoiding rate impacts to customers

- Tier II: Required increases of distributed renewable generation (1% by 2017 to 10% by 2032)
- Recommended Changes:
    - Sec. 3. 30. V.S.A. §8005 (a)(1)(C)
        - (C) Required amounts. The required amounts of distributed renewable generation shall be once percent of each retail electricity provider's annual electric sales during the year beginning January 1, 2017, increasing by an additional one and eight-tenths percent each third January 1 thereafter, until reaching 10 percent on and after January 1, 2032.
            - Change annual increase of 0.6% to 1.8% increase every 3-years
            - Flexible power planning
            - Less reporting requirements
            - Utilities still to meet % goals, while avoiding rate impacts to customers
- Tier III: Energy Innovation Projects
    - Balance must be achieved between DG and Innovation Projects to keep rates neutral
    - Increased DG will drive rate pressure
    - Cannot risk implementing ridged plan
        - Board and Department biannual report is critical