



Testimony on S. 51
Natural Resources and Energy Committee
Economic Development, Housing and General Affairs Committee

February 9, 2017

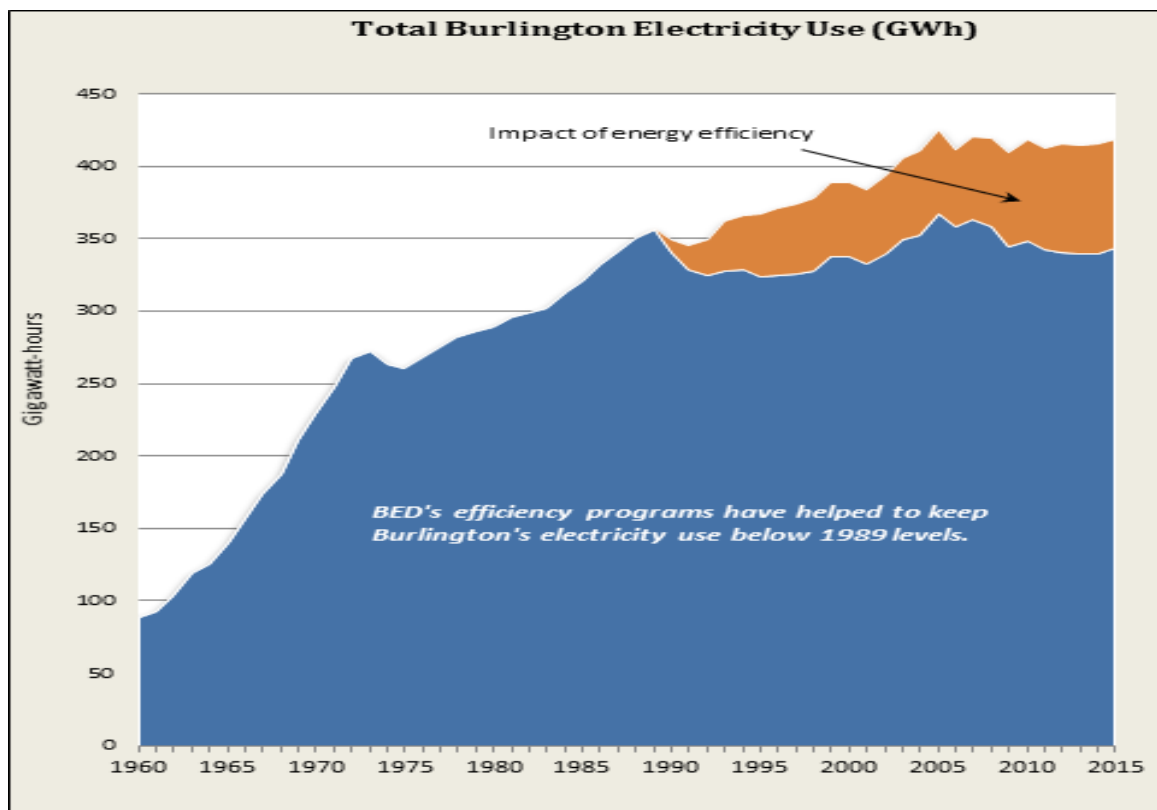
BED Overview

- Municipal utility located in Burlington
 - Public Power since 1905
 - 121 employees, including 39 at the McNeil generating station
 - Owned fiber optic loops and upgraded SCADA system
 - ~96% advanced meter deployment
- 20,000+ customers
 - 16,763 residential
 - 3,829 commercial and industrial
 - >6,000 residential accounts turn over each year
- Electricity facts:
 - Summer Peak: ~65 MW
 - Energy Use: ~350,000 MWH
 - Third largest electric utility in Vermont
 - McNeil is the largest generator in Vermont with VY Retirement



BED is its own Energy Efficiency Utility

- *Burlington uses less energy today than it did in 1989*



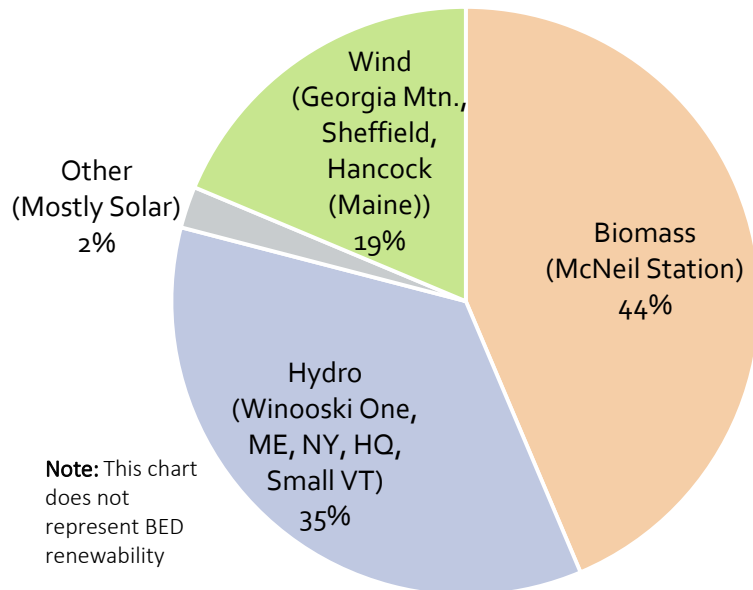
Energy Efficiency Savings

- ❑ Electric use today down about 4% from 1989.
- ❑ Total BED investment of \$28.8 million since 1990.
- ❑ BED saves an estimated \$4.1 million annually in direct costs (\$2.2 million energy, \$0.5 million capacity, and \$1.4 million transmission) from these investments - even at today's low energy prices.
- ❑ BED's customers save approximately \$11 million annually on their electric bills.
- ❑ On-bill financing available for commercial customers.
- ❑ Examples of business efficiency projects include HVAC and ventilation controls, LED fixtures with occupancy sensors.

National Leader in Renewable Energy

- *First city in the nation to source 100% of energy from renewable generation*

BED Owned & Purchased Power Resources CY2016

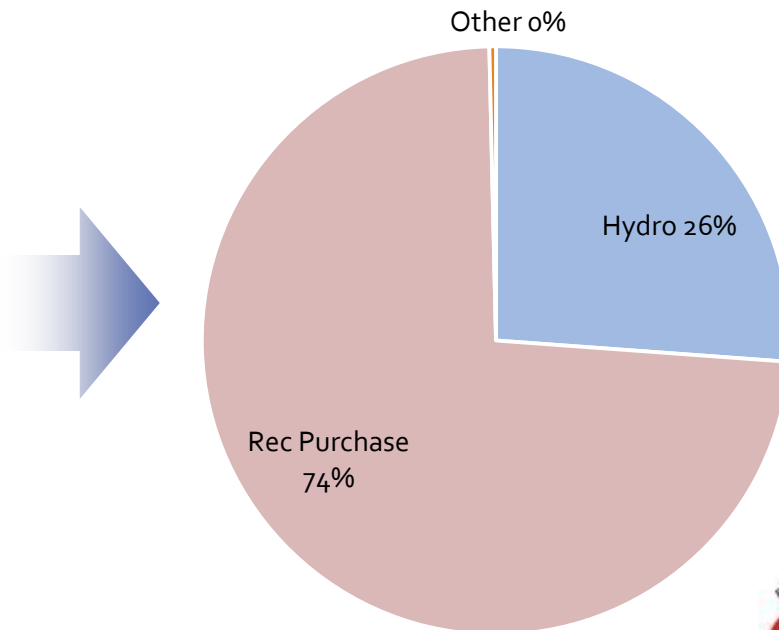


Note: This chart does not represent BED renewability

2/8/2017

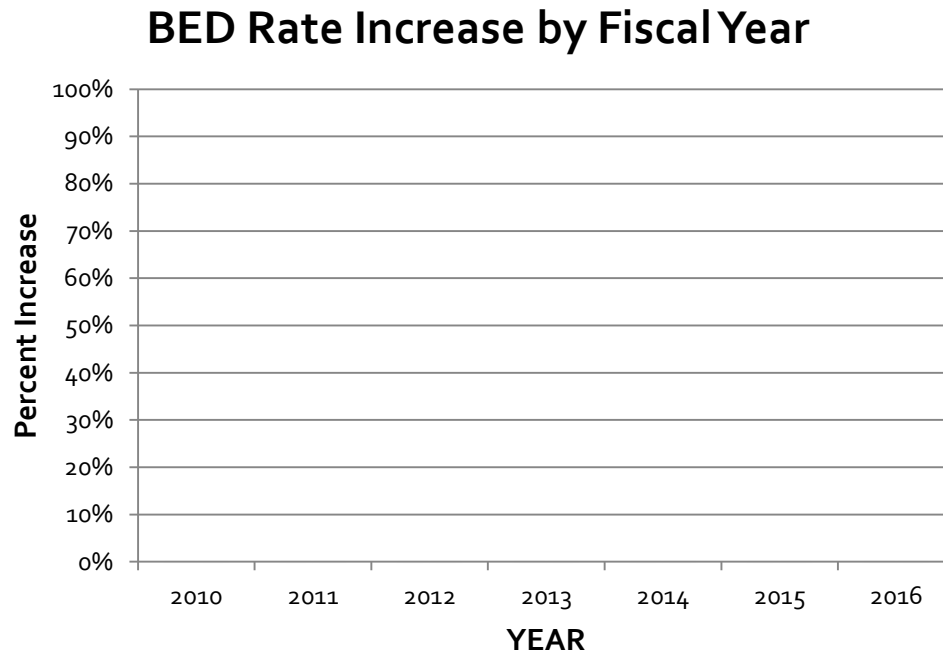
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BED Renewability, including REC Sales & Purchases CY2016 (estimated)



No rate increase since 2009

- Keeping rates low and stable for customers while continuing to lead in renewable power



Supporting local clean energy economy

- McNeil plant wood chip procurement – Mostly within 60 miles of the plant, support local forestry economy
 - *McNeil purchased from 56 different suppliers in FY16 (not including sub-contractors)*
 - *Vast majority of these suppliers are relatively small Vermont-based*
- New load control pilot program – *Packetized Energy*
 - *Using water heaters as a “virtual power plant” using emerging technology identified by the U.S. Department of Energy’s Advanced Research Projects Agency-Energy (ARPA-E) as one of the most promising technologies for coordinated distributed energy resources*
- Airport solar project - *Encore Redevelopment*
- Burlington City Schools Solar – *AllEarth Renewables and Encore Redevelopment*
- PowerUp Vermont partnership with Vermont Technology Council
- EV charging stations at *Hannafords, Church Street Marketplace, UVM* – over 600 charges by out-of-state visitors annually
- BED and DPW rooftop solar with *DC Energy Innovations*

Coming in 2017

- Continued Energy Efficiency
- Assist BED Customers with Solar Installations
 - In 2017, with BED assistance, UVM, the City of Burlington, and the Burlington Schools plan to deploy net metered solar arrays
 - Initiative to streamline solar permitting process for all customers
 - Positioning BED to become customers' "trusted partner" in all energy decisions
- District Energy analysis
- Tier III program
 - Electric Buses, cold-climate heat pumps, EV and charging infrastructure, etc.

BED Strategic Plan and S. 51

- S. 51
 - Largely consistent with BED Strategic Plan
 - Ensure continued support for McNeil
 - McNeil is owned 50% by BED, 31% by GMP, and 19% by VPPSA
- BED 10 Year Vision
 - Transform Burlington to a “net zero energy city” across electric, thermal, and transportation sectors by reducing demand, realizing efficiency gains, and expanding local generation, while increasing system resilience.
 - Including updated customer services and IT infrastructure, more efficient use of resources, distributed resources, micro-grids, growing local energy, and expanding “smart” capabilities city wide



BURLINGTON ELECTRIC DEPARTMENT 2016-2017 STRATEGIC PLAN

MISSION

To serve the energy needs of our customers in a safe, reliable, affordable, and socially responsible manner.

VALUES

Safety
Integrity
Community
Engagement
Innovation

10-YEAR VISION

Transition Burlington to a “net zero energy city” across electric, thermal, and transportation sectors by reducing demand, realizing efficiency gains, and expanding local renewable generation, while increasing system resilience.

STRATEGIC OBJECTIVES

Create a nimble organization by transforming our business platform and developing our human capital to best leverage an era of rapid change in the energy industry.

Deliver exceptional customer care by enhancing personal service and increasing engagement across all channels to efficiently resolve customer issues and proactively promote energy efficiency and other program opportunities.

Leverage our electric assets to take advantage of high-intensity, bi-directional energy creation and use that comes with distributed energy.

STRATEGIC INITIATIVES

Establish modern, simple, full-function customer care platform

Create service delivery model focused on high-quality customer care

Update IT backbone for core business functions

Create Vermont’s first “whole-home” energy efficiency utility

Strengthen grid and generation assets

Optimize efficiency of generation

Complete SCADA rollout and disaster recovery site

Establish asset management approach

Enhance cyber security capabilities

Implement plan to integrate and operate distributed energy resources.

Build 2-3 all-energy microgrids

Microgrids combine renewable generation, energy storage, and a thermal solution, e.g., district heat, with “islanding” capability

Burlington International Airport to improve reliability

Pine Street Campus to support mission critical operations

Downtown District, including BTC to bolster economic development

Develop “Grow Local Energy” program

Create service delivery model to simplify customer adoption

Build a suite of financial options to support solar and storage purchases

Use OBF/OBR for customer capital creation

Complete citywide mapping of preferred locations

Launch a preferred vendor program

Lead establishment of Smart City network

Joint BED/City data center

Use smart grid for utility automation and efficiency

Build analytics capability (systems and skills)