



**Better
Buildings**
U.S. DEPARTMENT OF ENERGY

Best Practices in Streamlining Access to Energy Data

Lori Herrick, Virginia Beach, VA

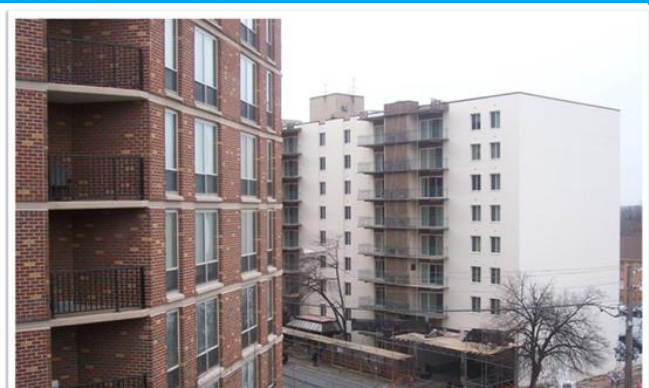
Elise Anderson, Massachusetts Department of Energy Resources

Sam Brooks, District of Columbia Department of General Services

Best Practices in Energy Data Collection and Tracking

U.S. DEPARTMENT OF
ENERGY

Energy Efficiency &
Renewable Energy



Better Buildings Summit
May 9, 2014
Washington, DC

Mona Khalil
Weatherization and
Intergovernmental Program
EERE

Barriers to Consistent Energy Data Collection and Tracking

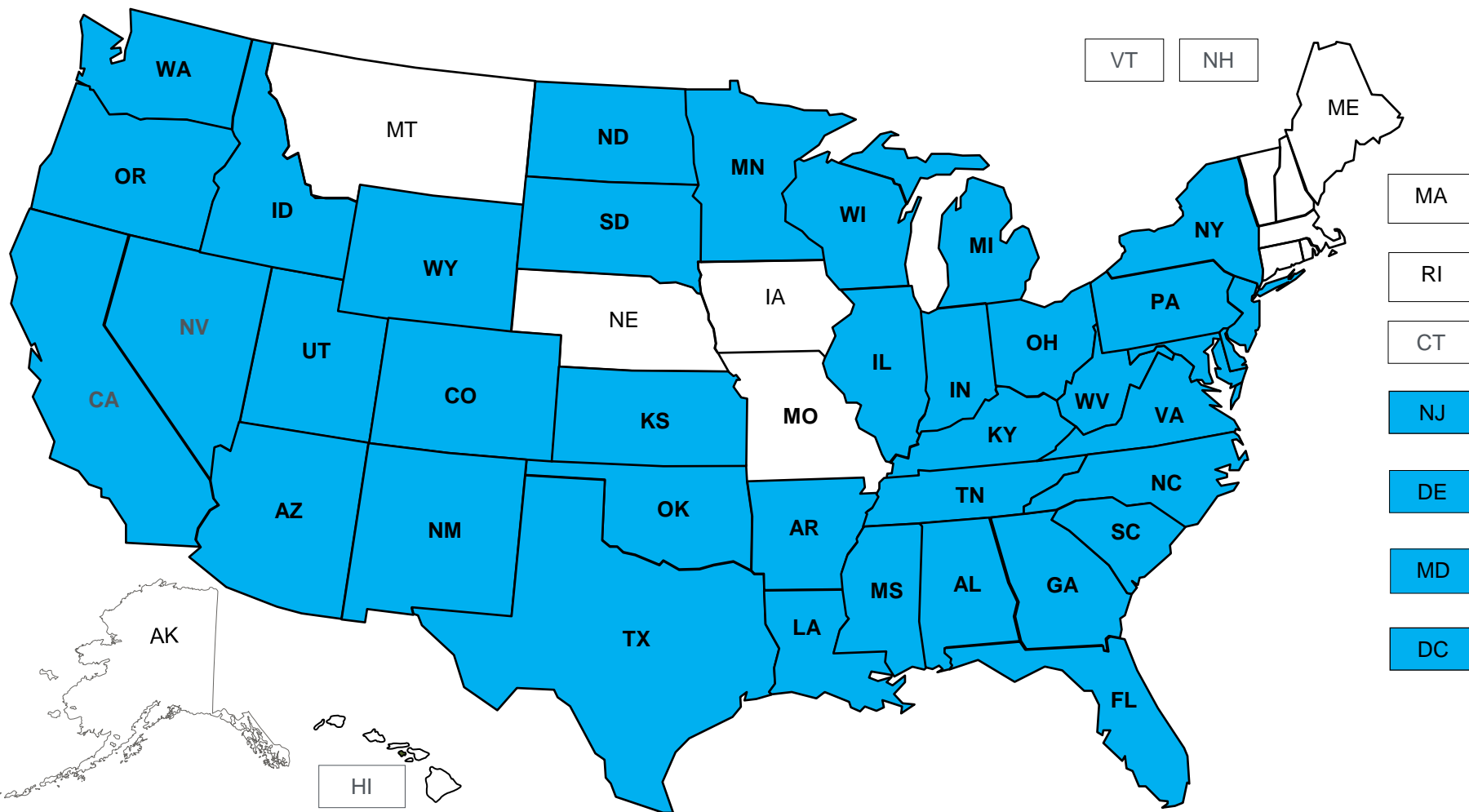
**Creating a
Comprehensive
Asset Inventory**

**Access to Automated
Utility Bill Data**

**Leveraging Tools &
Optimizing
Organizational
Processes**

**Stakeholder
Engagement**

Investor-Owned Utilities with Electronic Data Interchange Capabilities



States with IOUs using EDI

Mona Khalil

Policy Advisor

Policy and Technical Assistance

DOE EER Weatherization and Intergovernmental Program

Mona.Khalil@ee.doe.gov

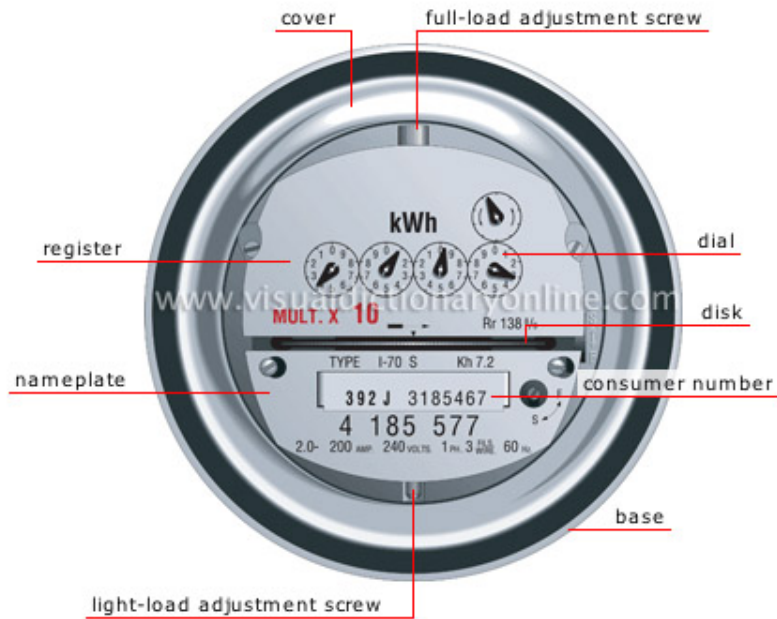
202-586-7983

Virginia Beach's Utility Invoice-to-Payment Program

Lori Herrick, MBA, LEED AP
Energy Management Administrator
City of Virginia Beach



Lots of these...



City Energy Payments

Vendor	FY10	FY11	FY12	FY13
Dominion Power & Other Electric Providers	\$12,322,214	13,159,937	\$14,323,470	\$14,343,212
Parker & Other Fuel Providers	\$4,933,417	\$ 6,254,024	\$7,333,652	\$7,313,450
Virginia Natural Gas and Other Natural Gas Providers	\$1,377,222	\$ 1,233,200	\$1,075,434	\$929,453
Propane	\$64,988	\$65,769	\$50,665	\$46,890
TOTAL	\$18,697,841	\$20,712,930	\$22,783,221	\$22,633,005

NOTE: This chart summarizes payments paid from object codes 605101 to 605104 and not including Capital Improvement Projects

\$3.9 Million increase since FY2010

Utility Payment Issues

- Decentralized bill review model
- Paper process and vendor delays led to duplicate charges, late payments, and fees
- No auditing tools
- Overall utility costs increased \$4M in two years
- **Tracking payments - but not energy!**

Energy Software

We determined that we needed energy software for the following reasons:

- To track our energy usage
- To perform energy savings measurement & verification on completed retrofits
- To provide energy reports that will help motivate occupants to conserve
- To make wise energy purchasing decisions
- To eliminate billing errors and late payment
- Improve budgeting, accruals, accounting

Looking at Electronic Invoicing...

Government will...

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Elect
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Sign in as a: [dropdown]

Customer Support
(866) 973-3131

Home About IPP Agencies Vendors Contact Us

SMART GOVERNMENT INVOICING

THE INVOICE PROCESSING PLATFORM

Success Stories Agencies Using IPP Downloads

Overview

The Invoice Processing Platform (IPP), is a secure, Web-based service that more efficiently manages government invoicing from purchase order (PO) through payment notification, at no charge to federal agencies and their vendors. [Find out more >](#)

Benefits

- ▶ IPP is a secure, Web-based service.
- ▶ IPP is designed for federal agencies and their vendors.
- ▶ IPP saves time and money.

Features

- ▶ Electronic Purchase Orders
- ▶ Electronic Invoices
- ▶ Automated Workflow
- ▶ Payment Notification Service

Federal Agencies
Schedule a Consultation

Vendors
Enroll Now

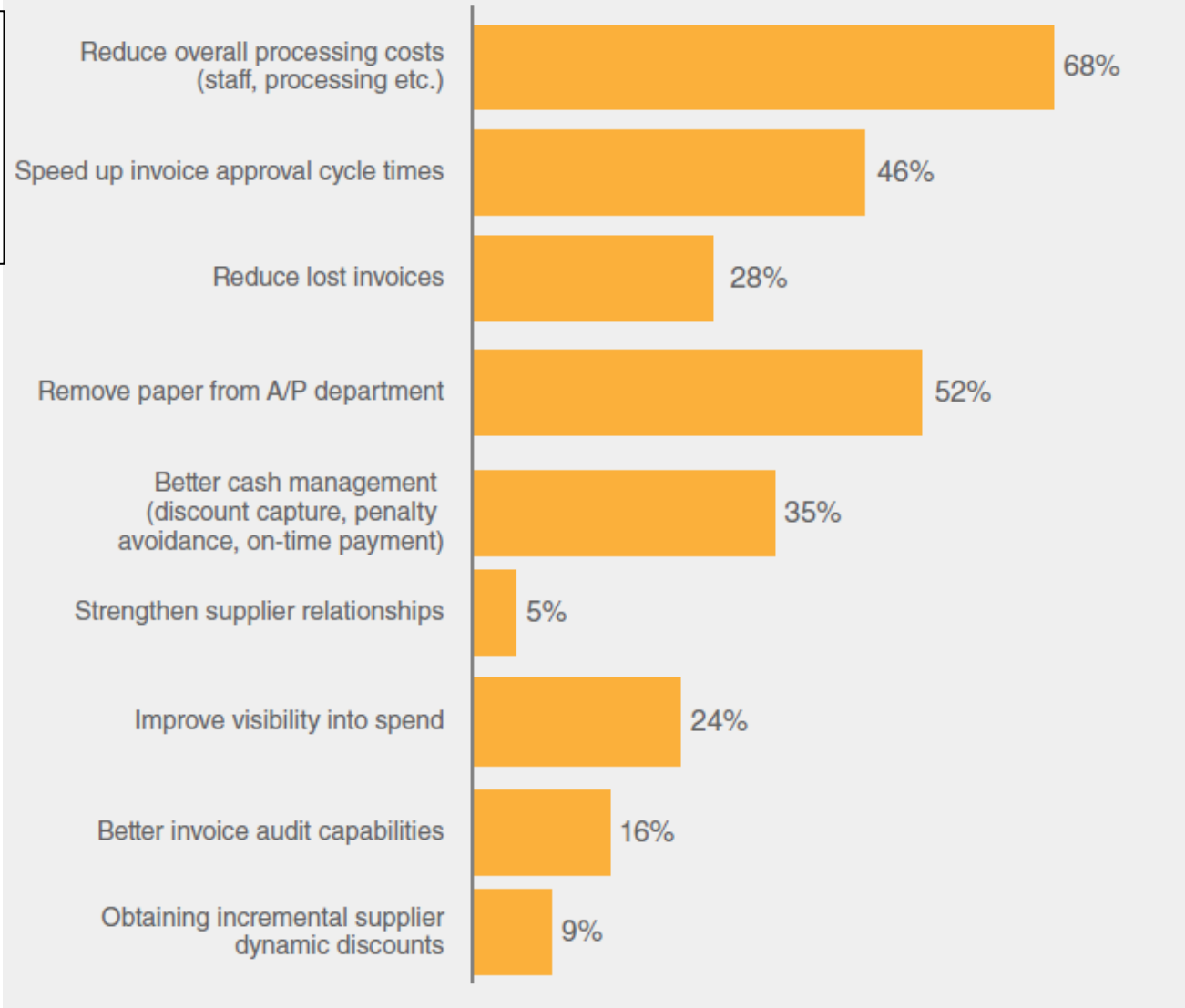
Federal Agency Events
Check back soon.

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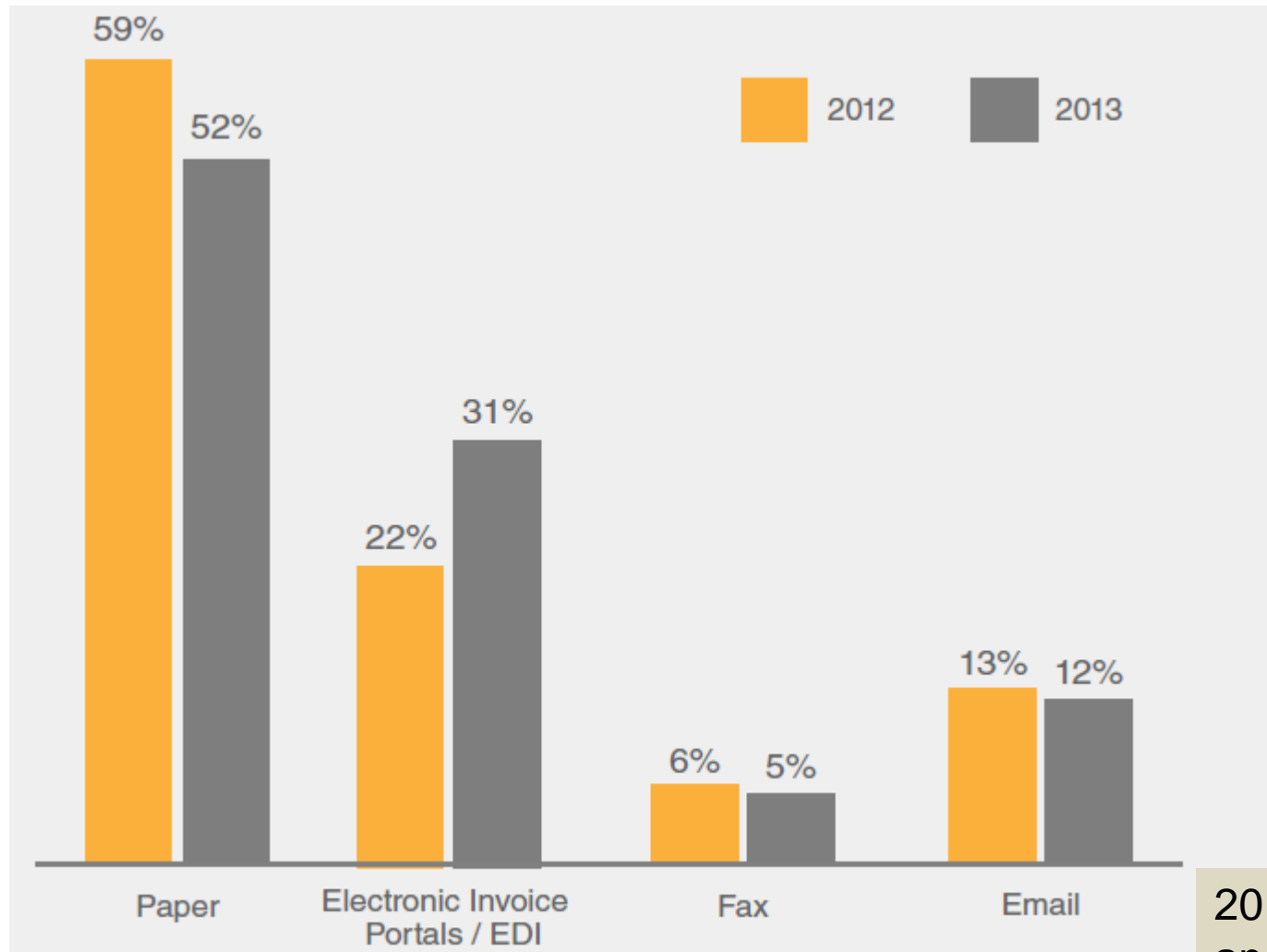
Looking at Electronic Invoicing...

What are the top three (3) factors driving your organization to focus on electronic invoices?



Source: Paystream
Advisors, 2013 Survey

Looking at Electronic Invoicing...



2011 was 64% paper and 14% electronic invoice

Source: Paystream Advisors, 2013 Survey

Looking at Electronic Invoicing...

The screenshot shows the Dominion Virginia Power website. The header includes the Dominion logo, the text "Welcome to Dominion Virginia Power", and navigation links for "Mobile Site", "1-866-DOM-HELP", "1-866-366-4357", "Sign In", and "Register". A search bar is visible with "Virginia" selected. The main content area is titled "Electronic Billing and Payments" and includes social media sharing options (Tweet, Share, Print, Email). A sidebar on the left lists various services: "Your Bill", "View Your Bill", "Make a Payment", "Payment Arrangements", "Manage Your Account", "Billing Options", "FAQs About Your Bill", "Customer Connection", "Bill Inserts", "Your Service", "Power Outages", and "Energy Conservation". The main text explains EDI (Electronic Data Interchange) and lists benefits for businesses.

What is EDI?
Electronic Data Interchange (EDI) is the direct computer-to-computer exchange of business information between "trading partners" (customers, vendors, banks etc.) according to transaction standards developed by the American National Standards Institute (ANSI).

Benefits for Your Business

Businesses who receive bills electronically and properly automate their Accounts Payable and Energy Management systems may expect the following benefits:

- Receive billing immediately – no mail delays
- No handling or filing of paper bills
- No keying of data into Accounts Payable or Energy Management systems
- No manual intervention for generating associated payments
- Ease of auditing, reporting and monitoring energy usage

To facilitate the automated update of the Accounts Payable or Energy Management systems, customers may provide the Company with a "reference" number for each customer account. This reference number will be returned on each EDI810 transaction. Customers who pay such bills electronically may expect the following benefits:

- No postage expense or delays
- Control over timing of disbursements
- Enhanced cash forecasting

Businesses who receive bills electronically and properly automate the update of their Accounts Payable and Energy Management systems may expect the following benefits:

- ✓ Receive billing immediately – no mail delays
- ✓ No handling or filing of paper bills
- ✓ No keying of data into Accounts Payable or Energy Management systems
- ✓ No manual intervention for generating associated payments
- ✓ Ease of auditing, reporting and monitoring energy usage

Dominion Virginia Power/Dominion North Carolina Power purchased "translation" software which converts their billing information to the standard "invoice" format referred to as the EDI810 transaction. This transaction is generated for each customer account billed, in lieu of the traditional paper customer bill.

The New Process – Step 1

Step 1

Bring all the utility bills belonging to various departments into the software

- ✓ Electronically for electric and natural gas
- ✓ Departments hand key the rest



VABeach Transmission Session Summary Report

Process Date: 02/27/2014

Organization: VABeach

Acct #:	Bill Date:	Due Date:	Total:	Pay Total:	Rate:
	02/25/2014	04/01/2014	132.76	132.76	120
	02/25/2014	04/01/2014	191.45	191.45	120
	02/25/2014	04/01/2014	6652.57	6652.57	120
	02/25/2014	04/01/2014	10032.98	10032.98	130
	02/25/2014	04/01/2014	373.10	373.10	120
	02/25/2014	04/01/2014	154.55	154.55	120
	02/25/2014	04/01/2014	290.85	290.85	120
	02/25/2014	04/01/2014	83.96	83.96	120
	02/25/2014	04/01/2014	216.27	216.27	110
	02/25/2014	04/01/2014	187.99	187.99	110
	02/25/2014	04/01/2014	165.90	165.90	120
	02/25/2014	04/01/2014	736.90	736.90	120
	02/25/2014	04/01/2014	120.05	120.05	120
	02/25/2014	04/01/2014	1264.72	1264.72	100
	02/25/2014	04/01/2014	413.18	413.18	120
	02/25/2014	04/01/2014	87.03	87.03	120
	02/25/2014	04/01/2014	113.60	113.60	120
	02/25/2014	04/01/2014	475.10	475.10	110
	02/25/2014	04/01/2014	404.42	404.42	120
	02/25/2014	04/01/2014	549.48	549.48	110
	02/25/2014	04/01/2014	717.95	717.95	110
	02/25/2014	04/01/2014	85.31	85.31	120
	02/25/2014	04/01/2014	93.55	93.55	120
	02/25/2014	04/01/2014	924.12	924.12	110
	02/25/2014	04/01/2014	450.62	450.62	110
	02/25/2014	04/01/2014	474.04	474.04	120
	02/25/2014	04/01/2014	416.66	416.66	120
	02/25/2014	04/01/2014	296.33	296.33	120
	02/25/2014	04/01/2014	130.61	130.61	120

29 VA Dominion Invoices for a Total Invoice Amount of \$26236.05

29 VA Dominion Invoices for a Pay Total of \$26236.05

Acct #:	Bill Date:	Due Date:	Total:	Pay Total:	Rate:
	02/20/2014	03/20/2014	41.49	41.49	STANDARD

Name	Date modified	Type	Size
RE_HarmonyWelfareCheck	2/27/2014 8:29 AM	Text Document	3 K
REA GIS Data			

EDIError201402270628 - Notepad

File Edit Format View Help

Error Report

Process Date: 02/27/2014 06:28:25

PROCESSING ERRORS

VABeach-VA Nat Gas Invoice #:
Previous Balance Amount of 999.44
Late Charge Amount of 14.99

VABeach-VA Nat Gas Invoice #:
Previous Balance Amount of 647.01
Late Charge Amount of 9.71

VABeach-VA Nat Gas Invoice #:
Previous Balance Amount of 215.03
Late Charge Amount of 3.23

VABeach-VA Nat Gas Invoice #:
Previous Balance Amount of 579.35
Late Charge Amount of 8.69

Bills With Problems BL - 27

Account code:

1058 College Park Blvd, Virginia Beach, VA23464

Billing Period	Start Date	End Date	Cost
201402	1/27/2014	2/20/2014	\$539.57

Severity	Key	Message
2	A	Abnormally short billing period.; Current days: 24.00; Comparison days: 30.83; Variance: -22.2%

Account code:

1040 Lynnhaven Parkway, Traffic Controller, Virginia Beach, VA23452

Billing Period	Start Date	End Date	Cost
201402	1/24/2014	2/20/2014	\$24.11

Severity	Key	Message
2	A	Use per day is the same as the prior two months. Possible estimated bill, but estimated flag not checked.; Meter: TS_061_ELE_01

Account code:

Prk Thompkins 5709 Providence Rd, Virginia Beach, VA23456

Billing Period	Start Date	End Date	Cost
201402	1/27/2014	2/21/2014	\$372.98

Severity	Key	Message
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BL19.pdf - Adobe Acrobat Pro

File Edit View Window Help

Create | [Icons] | Customize

1 / 1 | [Icons] | 84.1% | [Icons] | Tools Sign Comment

Late Fees Report BL - 19

Account Code	Cost Center Code	Vendor Code	Start Date	End Date	Billing Period	Late Fee
	EMT_8	1625	1/22/2014	2/20/2014	201402	\$14.99
	MARINE_SCIENCE	1625	1/22/2014	2/20/2014	201402	\$9.71
	HNP	1625	1/22/2014	2/20/2014	201402	\$3.23
	CV_C_V_B	1625	1/22/2014	2/20/2014	201402	\$8.69

Total Record Count: 4

Grand Total : 36.62

The New Process – Step 2

Step 2

Audit and approve the energy bills through EnergyCAP





Setup

Analysis

Accounting

Accounts

Work Flow Manager

Templates

Rates

Reporting

Cost Avoidance

Work Flow Manager

Open/Close Batch New Bills Options

- Bill
 - Unapproved
 - Problem
 - Last Thirty Days
 - Waiting to Verify
 - Holding for Export
 - Waiting to A/P Expo
 - Waiting to G/L Expo
- Batch
- Open
- Channels
- Bill Import Processor
- Virtual Bill Processor
- Split Bill Processor

Account	Vendor	Period	Year	Start Date
	DOMINION VIRGINIA POWER	Feb	2014	1/23/2014
	DOMINION VIRGINIA POWER	Feb	2014	1/28/2014
	DOMINION VIRGINIA POWER	Feb	2014	1/27/2014
	DOMINION VIRGINIA POWER	Feb	2014	1/23/2014
	DOMINION VIRGINIA POWER	Feb	2014	1/23/2014
	DOMINION VIRGINIA POWER	Feb	2014	1/24/2014
	DOMINION VIRGINIA POWER	Jan	2014	1/16/2014
	DOMINION VIRGINIA POWER	Jan	2014	1/21/2014
	DOMINION VIRGINIA POWER	Jan	2014	1/8/2014
	DOMINION VIRGINIA POWER	Jan	2014	1/17/2014
	DOMINION VIRGINIA POWER	Jan	2014	1/21/2014
	DOMINION VIRGINIA POWER	Jan	2014	1/17/2014
	DOMINION VIRGINIA POWER	Feb	2014	1/21/2014
	DOMINION VIRGINIA POWER	Feb	2014	1/21/2014
	DOMINION VIRGINIA POWER	Feb	2014	1/21/2014
	DOMINION VIRGINIA POWER	Feb	2014	1/23/2014
	DOMINION VIRGINIA POWER	Feb	2014	1/23/2014
	DOMINION VIRGINIA POWER	Feb	2014	1/23/2014

Count: 150 Total: \$563,774.99

Severity	Status	Key	Message	Date Created	Created By	Comment
< no data >						

View Bill



Account: Vendor: **DOMINION VIRGINIA POWER**
 Description: [PU Sewer Pump -430-5644 Old Providence Rd](#) **Bill Image**
 Address: 5644 Old Providence Road [Virginia Beach, VA, 23464]
 Start date: 1/23/2014 End date: 2/20/2014 Days: 28
 Billing period: Feb 2014 Pay amount: \$66.97

Period	Year	Start Date	End Date
Feb	2014	1/23/2014	2/20/2014
Jan	2014	12/20/2013	1/23/2014
Dec	2013	11/20/2013	12/20/2013
Nov	2013	10/21/2013	11/20/2013
Oct	2013	9/20/2013	10/21/2013

Batch number: 20140228 EDI_DOM_02/26 Invoice number:
 Control code: DOM0490805009-00957564- Statement date: 2/24/2014
 Due date: 3/31/2014 Vendor address:
 Estimated:

- Bill
- Meter History
- Account Cost
- Account Cost/Day
- Meter Cost/Day
- Meter Use/Day
- Unit Cost
- Demand
- Load Factor

	VALUE	COST
Account: 0490805009		
Meter: PU-430 ELE 01	PU-430_ELE_01	Electric
GL: PU-430 ELE 01		Rate: 120
Place: PU-430	PU Sewer Pump -430-5644 Old Providence Rd	Meter Ser #: 0005601841
On Peak Use	425 kWh	
ON PEAK USE CHARGE		18.23 \$
Off Peak Use	247 kWh	
OFF PEAK USE CHARGE		6.51 \$
Distribution Charge		8.97 \$
On Peak Demand	5.8 kW	
Off Peak Demand	5.4 kW	
Fuel		17.94 \$
Rider R Bear Garden Gen Station		0.80 \$
Rider S Va City Hybrid Energy Ct		2.70 \$
Rider T Transmission		4.21 \$
Rider B Biomass Conversions		0.12 \$
Rider W Warren Co Power Station		0.93 \$
Rider RW/ Brunswick Co Pwr Station		0.50 \$

Bill Properties

Batch Number	20140228 EDI
Bill ID	119770
Created	By MPodolin On
Last Modified	By MPodolin On
Approved	N/A
A/P Export Date	N/A
G/L Export Date	N/A
Was Split Date	N/A
Bill Type	From Vendor
Invoice Pages	N/A
Check Number	N/A
Check Date	N/A
Pay Status	N/A
Cleared Date	N/A
Creation	Automatic
Estimated	No
Transaction Ref	N/A

View Bill

Bill Image



DOMINION VIRGINIA POWER/NORTH CAROLINA POWER
 P.O. BOX 26666
 RICHMOND, VA 232616666
 1-866-591-0157

Invoice Type	Due Date	Account #	Amount Due
Product/Service Bill	03/31/2014		66.97

Bill To

CITY OF VIRGINIA BEACH
 5644 OLD PROVIDENCE RD
 PS 430/AVALON HILLS
 VIRGINIA BCH, VA 23464

Service Address

CITY OF VIRGINIA BEACH
 5644 OLD PROVIDENCE RD
 PS 430/AVALON HILLS
 VIRGINIA BCH, VA 23464

Account Activity

Date of Bill	02/24/2014	Previous Balance	Not Provided
		Total Amount of Payments	Not Provided
		Balance Forward	\$0.00
		+ Current Bill	\$66.97
		Current Balance	\$66.97

Electric Service - Account Summary

Invoice Number		Distribution Service - Basic Customer Charge	\$5.66
Premise Number		Distribution Service - Distribution Service Kwh	\$8.97
Meter No.	00RG005290	Electricity Supply Svc (ess) - On Peak Energy Chg	\$18.23
Rate	Schedule 120	Electricity Supply Svc (ess) - Off Peak Energy Chg	\$6.51
Current Reading	672 Billed 02/20/2014	Electricity Supply Svc (ess) - Fuel	\$17.94
Previous Reading	0 Billed 01/23/2014	Electricity Supply Svc (ess) - Rider R Bear Garden	\$0.80
Measured Usage	672.0	Gen Station	
Multiplier	1.0000	Electricity Supply Svc (ess) - Rider S Va City Hybrid	\$2.70
KWH Used	672	Energy Ctr	
Description	Schedule 120	Electricity Supply Svc (ess) - Rider T Transmission	\$4.21
	Off Pk Dem	Electricity Supply Svc (ess) - Rider B Biomass	\$0.12
	On Pk Dem	Conversions	
	Off Pk Usage	Electricity Supply Svc (ess) - Rider W Warren Co	\$0.93



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 Cost Avoidance

Work Flow Manager

- Bill
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 - Problem
 - Last Thirty Days
 - Waiting to Verify
 - Holding for Export
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 - Open
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 - Bill Import Processor
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Account	Vendor	Period	Year	Start Date
	DOMINION VIRGINIA POWER	Feb	2014	1/23/2014
	DOMINION VIRGINIA POWER	Feb	2014	1/28/2014
	DOMINION VIRGINIA POWER	Feb	2014	1/27/2014
	DOMINION VIRGINIA POWER	Feb	2014	1/23/2014
DO			2014	1/23/2014
DO			2014	1/24/2014
DO			2014	1/16/2014
DO			2014	1/21/2014
DO			2014	1/8/2014
DO			2014	1/17/2014
DO			2014	1/21/2014
DO			2014	1/17/2014
DO			2014	1/21/2014
DO			2014	1/21/2014
DO			2014	1/23/2014
DO			2014	1/23/2014
DO			2014	1/23/2014

- Approve
- Verify
- Toggle Export Hold
- Mark Problems Fixed
- Mark Problems Ignore
- New
- Delete Bill from Database
- Edit
- View**
- Void/Un-Void Bill
- View Bill Images
- Locate Account
- Create Batch
- Audit...
- Copy to Clipboard
- Properties
- <Edit> on double click mode

Count: 150

Severity	Status	Ke
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Total: \$563,774.99

	Created By	Comment
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The New Process – Step 3



Step 3

Energy Office batches to Accounts Payable by completing the following:

1. Running and clearing issues on the problem and prevalidation reports
2. Exporting out of EnergyCap and running the bill reformatter
3. Placing the file in a folder where the Department of Finance can retrieve the file and import into Oracle

Energy Software – Changing the Process

STEP 1

Bring all the utility bills into the software (electronically when possible):



Public Works

Convention & Visitors Bureau

Public Utilities

STEP 2

Audit and approve the energy bills:

Energy Software



STEP 3

Supervisor approves and batch to Accounts Payable:

Interface to Accounts Payable – Pays Vendor



THREE INTERFACES –

- **City-Wide Energy Reports**
- **Departmental Energy Reports**
- **Greenhouse Gas Reporting**
- **Energy Star National Benchmarking**

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City's Intranet Site - Energy Reports

The screenshot displays a web browser window with the address bar showing "Beachnet - Energy Usage By De...". The browser's toolbar includes icons for home, RSS, mail, printer, and navigation. The website header features the "beachnet" logo and navigation menus for "Energy Management" and "Energy Usage By Departments". A secondary navigation bar includes "Home", "Benefits & Services", "Member Communications", "Financial Services", "Organization" (highlighted), "Technology Services", "Forms Center", and "Search Center".

A green-bordered box highlights the "Online Service Desk" announcement: "The new Online Service Desk is now available to all members. Members can use the Online Service Desk to report technology issues and request IT services. Click here to go to the ComIT Service Desk page (user instructions are included on this page), and click the Online Service Desk photo to access the application and submit your request."

The main content area shows the breadcrumb "Home > Organization > Energy Management > Energy Usage By Departments" and the title "Energy Usage By Departments - Through 12/31/2013".

Under the heading "* City Wide", the following reports are listed:

- City of Virginia Beach Commodity Summary Report
- City of Virginia Beach Dept. Summary
- City of Virginia Beach Organizational Report
- City Wide Fuel Report Totals through 12-31-13

Under the heading "Agriculture", the following reports are listed:

- Agriculture Building Report
- Agriculture Commodity Summary Report
- Agriculture Dept Fuel Report

A sidebar on the left contains a navigation menu with items such as "Our City", "City Manager's Corner - Shaping Our City", "Administrative Directives", "Branding", "City & State Codes", "Department Directory", "Energy Management (1)", "Energy Usage By Departments" (highlighted), "Emergency Operations", "FOIA", "HIPAA", "HR Policies & Procedures", "Integrity Connection", "Records Management", "SEA of Change", and "Workforce Planning & Development/Equal Employment Opportunity Plans".

We supply over 90 energy reports a quarter. Each department receives a commodity Report, a building report and a fuel report.

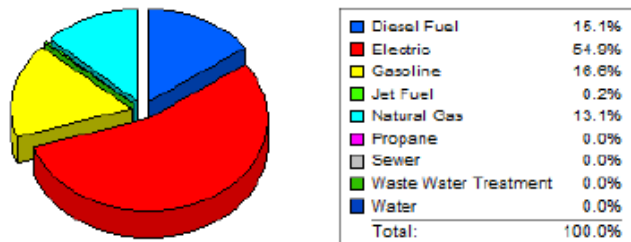
Energy Reports

City of Virginia Beach
Billing Period between Jul 2013 and Dec 2013

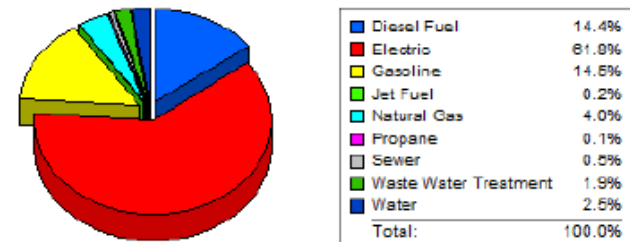
City of Virginia Beach Dashboard Report
Executive Summary by Commodity

Place: City of Virginia Beach

Energy Use Percentage

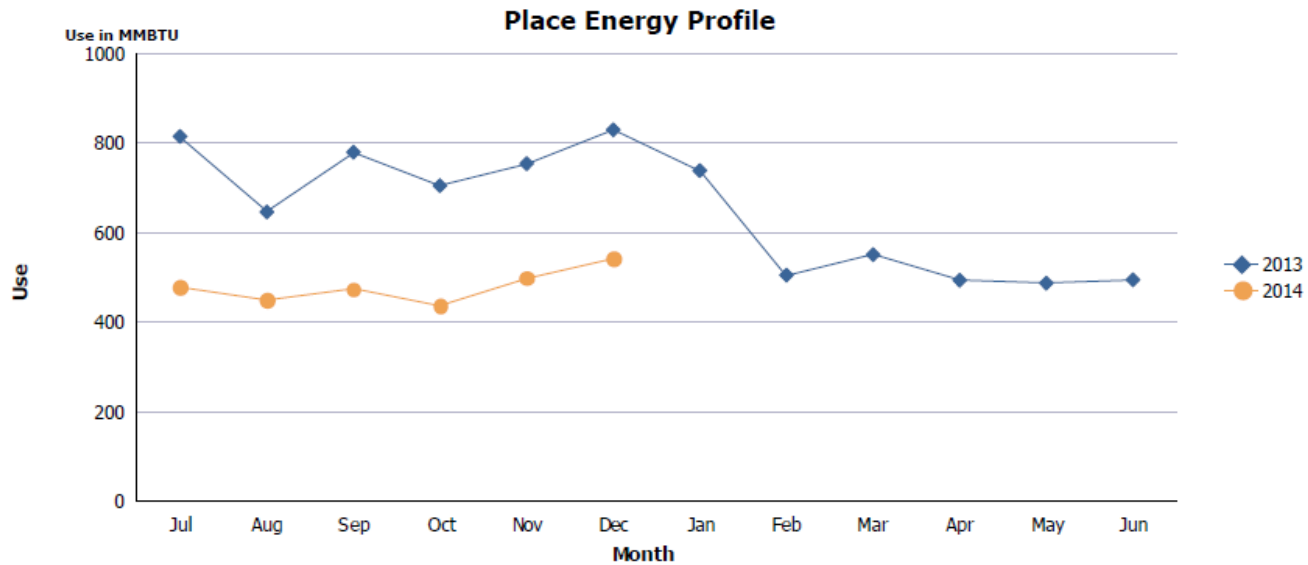


Cost Percentage



Commodity	Common Use	Energy Use: MMBtu	Energy Percentage	Cost	Cost Percentage	Cost/Unit
Diesel Fuel	529,760 Gal	66,114	15.1%	\$1,727,387.18	14.4%	\$3.2607 / Gal
Electric	70,361,747 kWh	240,145	54.9%	\$7,436,574.09	61.9%	\$0.1057 / kWh
Gasoline	582,509 Gal	72,697	16.6%	\$1,729,994.69	14.4%	\$2.9699 / Gal
Jet Fuel	7,934 Gal	1,063	0.2%	\$26,635.23	0.2%	\$3.3571 / Gal
Natural Gas	571,044 THERM	57,104	13.1%	\$474,259.72	4.0%	\$0.8305 / THERM
Propane	3,403 Gal			\$11,083.89	0.1%	\$3.2569 / Gal
Sewer	46,421 Kgal			\$63,867.12	0.5%	\$1.3758 / Kgal
Waste Water Treatment	305,512 Kgal			\$231,229.76	1.9%	\$0.7569 / Kgal
Water	63,663 Kgal			\$303,850.92	2.5%	\$4.7728 / Kgal
Grand Totals:		437,123		\$12,004,882.60		

Energy Reports



Year	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Totals
2013	816	647	780	705	754	830	739	505	550	493	487	494	7,799
2014	478	449	473	436	498	542	0	0	0	0	0	0	2,876
Totals	1,293	1,096	1,253	1,141	1,252	1,372	739	505	550	493	487	494	10,675

Energy Reports

WM Bureau of Waste Collection

Monthly Comparison Report

Diesel Fuel

Month	Use (Gal)			Cost			Demand			Mean Temp (F)	
	Base Year 2013	Current Year 2014	Variance [%]	Base Year 2013	Current Year 2014	Variance [%]	Base Year 2013	Current Year 2014	Variance [%]	Base Year 2013	Current Year 2014
Jul	22,626	31,519	39.3	\$72,823.30	\$102,533.63	40.8	0	0	0.0		
Aug	32,093	28,901	-9.9	\$111,025.54	\$95,940.57	-13.6	0	0	0.0		
Sep	27,204	26,523	-2.5	\$96,220.93	\$87,862.88	-8.7	0	0	0.0		
Oct	29,375	30,521	3.9	\$102,953.83	\$98,740.82	-4.1	0	0	0.0		
Nov	32,012	27,245	-14.9	\$109,452.81	\$86,313.16	-21.1	0	0	0.0		
Dec	27,189	27,309	0.4	\$92,025.87	\$88,977.19	-3.3	0	0	0.0		
Jan	29,166			\$98,849.86			0				
Feb	24,325			\$86,247.19			0				
Mar	28,154			\$93,388.96			0				
Apr	32,073			\$102,421.72			0				
May	34,502			\$108,639.52			0				
Jun	29,607			\$93,389.95			0				
Eq. YTD:	170,500	172,017	0.9	\$584,502.28	\$560,368.25	-4.1	0	0	0.0		
Total:	348,327	172,017		\$1,167,439.48	\$560,368.25		0	0			

EPA ENERGY STAR Portfolio

The screenshot displays the EPA ENERGY STAR Portfolio Manager software interface. The main window is titled "Facility Manager" and shows the following details for a facility:

- Place Properties**
 - Code:** [1004](#)
 - Display:** School Administration (Bldg 16)
 - Location:** Facilities---> VIRGINIA_BEACH [City of Virginia Beach]---> UTILITIESANDFUEL [Utilities and Fuel]---> SCHOOLS [Schools]
 - Place Type:** Building
 - Place Primary Use:**
 - Contact:** [Public Works Building Maint](#)
 - Weather Station:** [Virginia Beach,VA,US](#)
 - ENERGY STAR Status:** Enabled
 - Most Recent ENERGY STAR Rating:** [81](#) (3/27/2014)
 - Cost Avoidance:**
- Address:** 2435 Princess Anne Road, Virginia Beach, VA 23456
- Chart Data Current as of:** 4/18/2014 5:25:00 AM

The interface also includes a "Fiscal Year Summary (FY Begins in Jul, Ends in Jun of Year Shown)" section with two charts:

- Total Cost Summary:** A bar chart showing energy costs for 2011, 2012, 2013, and 2014 YTD.
- Energy Cost Percentage:** A pie chart showing that 100% of the energy cost is from electricity.

The bottom of the window shows a breadcrumb trail: General / Commodity / Monthly / Greenhouse Gases / ENERGY STAR /

Benefits of the New Process:

- ✓ Eliminated approximately 12,000 paper invoices annually
- ✓ Eliminated the likelihood of keying errors and charges to incorrect accounts
- ✓ EDI process is being explored with other vendors
- ✓ Invoice processing time has been reduced by two to ten days

Benefits of the New Process (continued):

- ✓ More efficient bill validation and payment authorization
- ✓ Credits are correctly applied and current
- ✓ Late fees are rare
- ✓ Automated nightly bill auditing process
- ✓ Focus away from administration to analysis

Government Finance Officers Association (GFOA) Award

In 2013, the City of Virginia Beach (CVB) has received the Louisville Award for Innovation in Government from the Government Finance Officers Association (GFOA) for its new Energy Software Program.

The GFOA recognized this initiative as a contribution to the practice of government finance that exemplifies outstanding management. The last time an entity received the Louisville Award was in 2008.



Lessons learned...

Need all the Departments support – our key players were:

- City Manager's Office
- Department of Finance
- Information Technology
- Public Works
- Planning Dept. - for Address verification
- City Wide Requirement to use after we went live
- Phases

Acknowledgments

This material is based upon work supported by the Department of Energy, Energy Efficiency and Renewable Energy, under CFDA 81.128 and ARRA DE-EE0000876.

Disclaimer

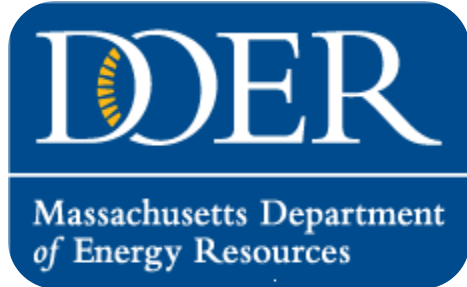
This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

The Future of Energy...

Questions?

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Utility Energy Data and Massachusetts Public Buildings

Elise Anderson

Energy Programs Coordinator

Massachusetts

Department of Energy Resources (DOER)

*U.S. Department of
Energy :
2014 Better Buildings
Summit*

*Washington D.C.
May 7-9*

*Session: Best Practices
in Streamlining Access
to Utility Data*

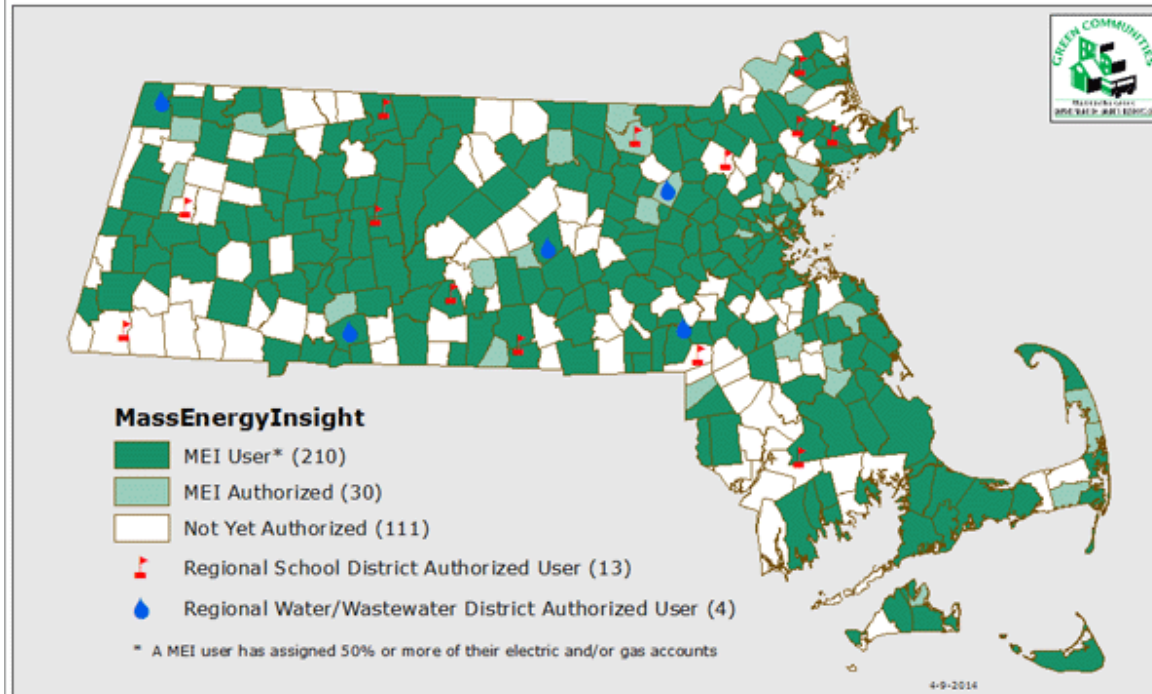
MassEnergyInsight

● ● ● ● ● POWERING EFFICIENCY

Municipalities Tracking Energy Use Using

MassEnergyInsight

● ● ● ● ● POWERING EFFICIENCY



- **FREE** online tool for MA municipalities and public entities
- Automated electronic upload of electric and gas data
- All energy costs and accounts in one place

DER

Massachusetts Department
of Energy Resources

Creating A Cleaner Energy Future For the Commonwealth



- **Benchmark:** track energy use by town, department or building
- **Identify:** least efficient buildings for efficiency action
- **Measure and verify:** energy use trends by building over time

Enabling Legislation

M.G.L. Chapter 25a, section 7 (enacted 1979)

1. Authority to collect utility data from investor-owned utility companies (electric/gas)
2. Authority to distribute data in aggregate, or if authorized by senior town official to share building level data
3. Ability to keep data confidential from FOIA requests

MEI Usage Stats

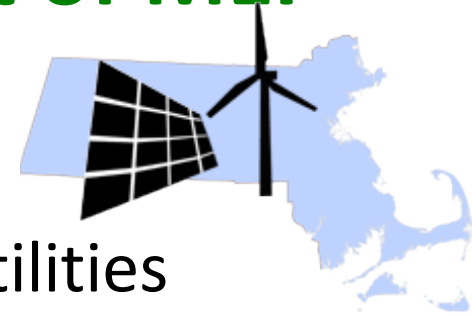
- Entities (municipalities, school districts, wastewater treatment) using MEI: **273**
- Individual users: **938**
- Utility accounts: **28,000**
- **Municipalities actively using MEI: 210/351 (60%)**

Annual energy use reported into the system:

- electricity: 2.1 billion kWh
- natural gas: 83 million therms
- oil: 4.5 million gallons



Challenges for Development of MEI



- Logistics of data transmission from utilities
 - No standards existed
- Utilities don't typically "tag" public accounts.
- Associating accounts to buildings: municipalities must become users and set-up accounts.
 - Municipalities motivated for grant \$\$
- Manual data input (wood, oil, propane)
- Take the burden off of the towns!

What is MEI used for?



Calculate an energy use baseline inventory that includes:

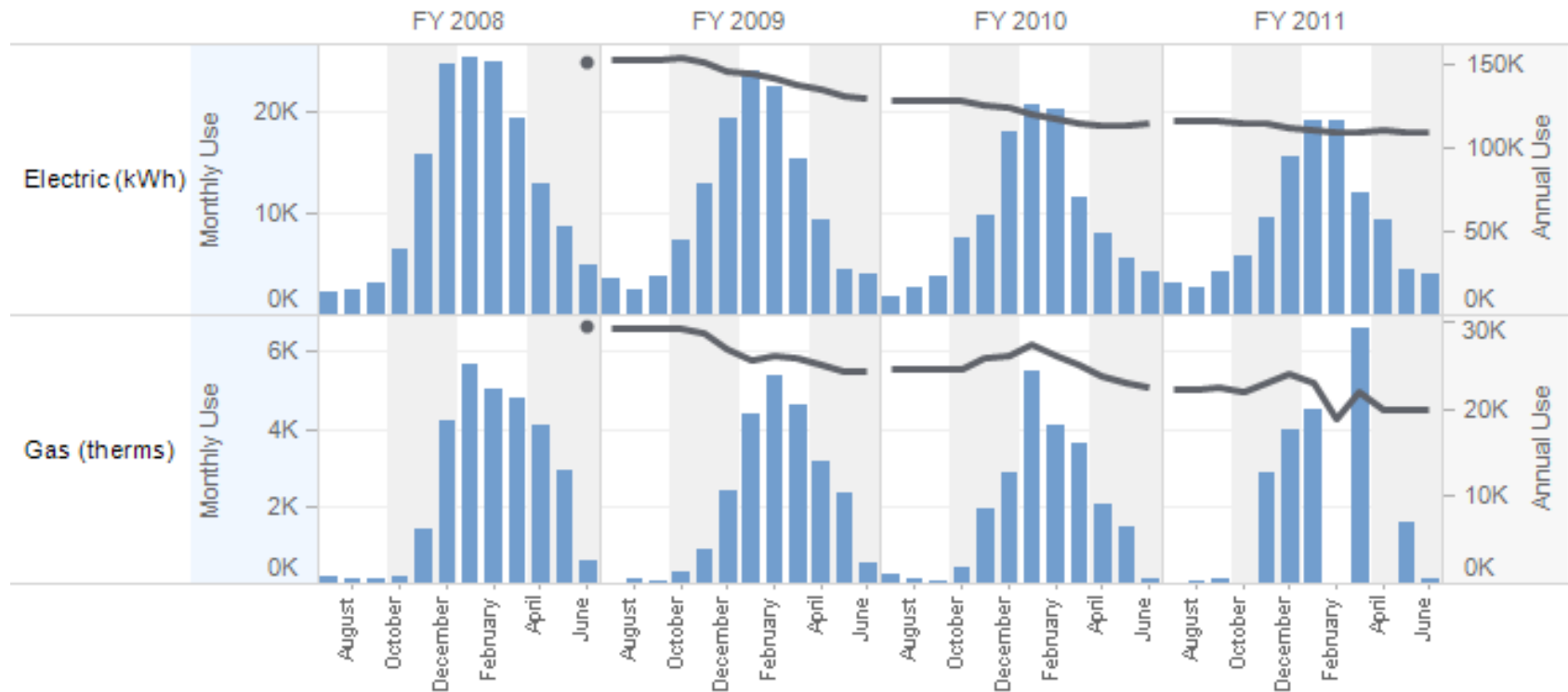
- Municipal buildings, including schools
- Vehicles
- Street and traffic lighting (if municipally-owned)
- Water/wastewater treatment and pumping



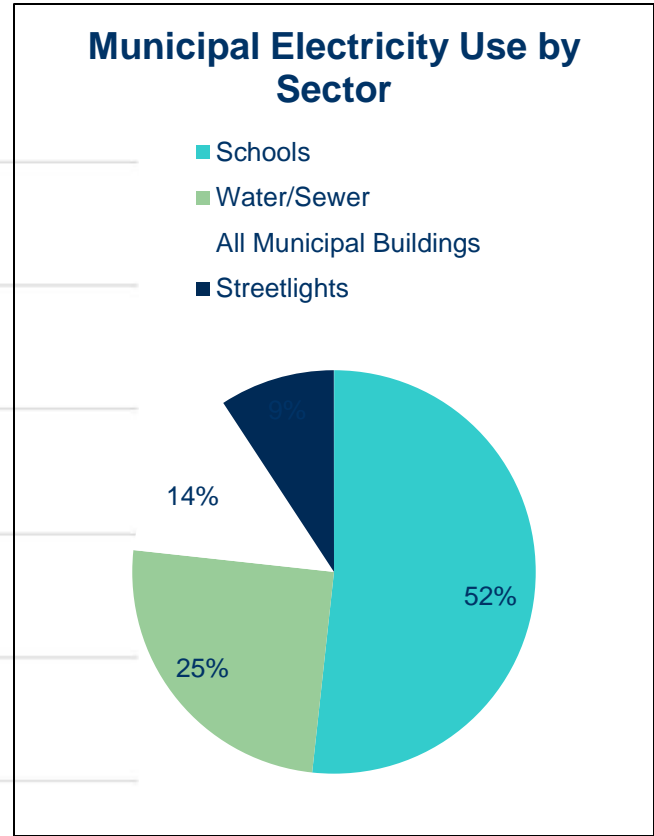
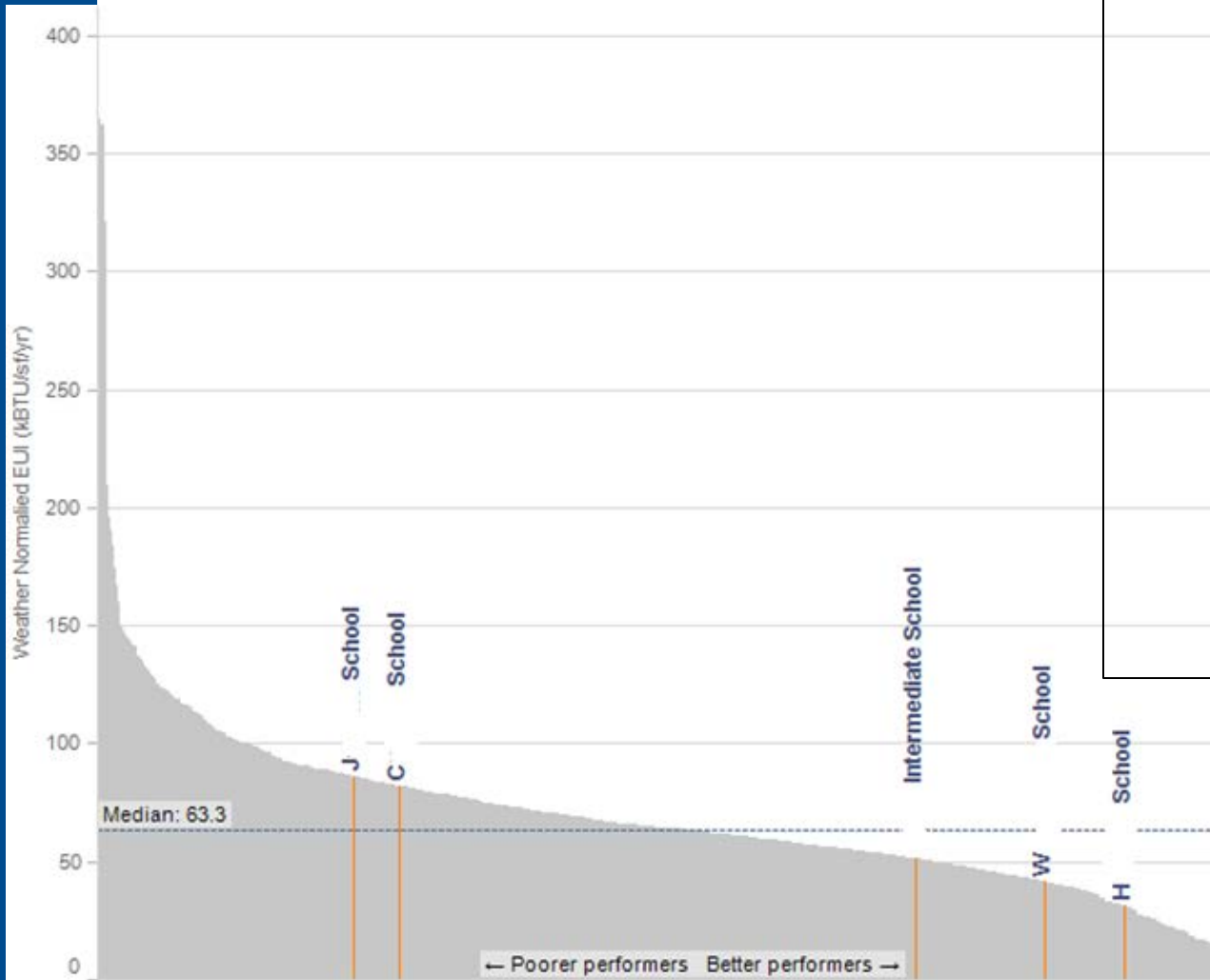
Measure Energy Use by Building

Building Dashboard

Usage Trends ■ Monthly Use ■ Annual Use (12 Month Rolling Sum)

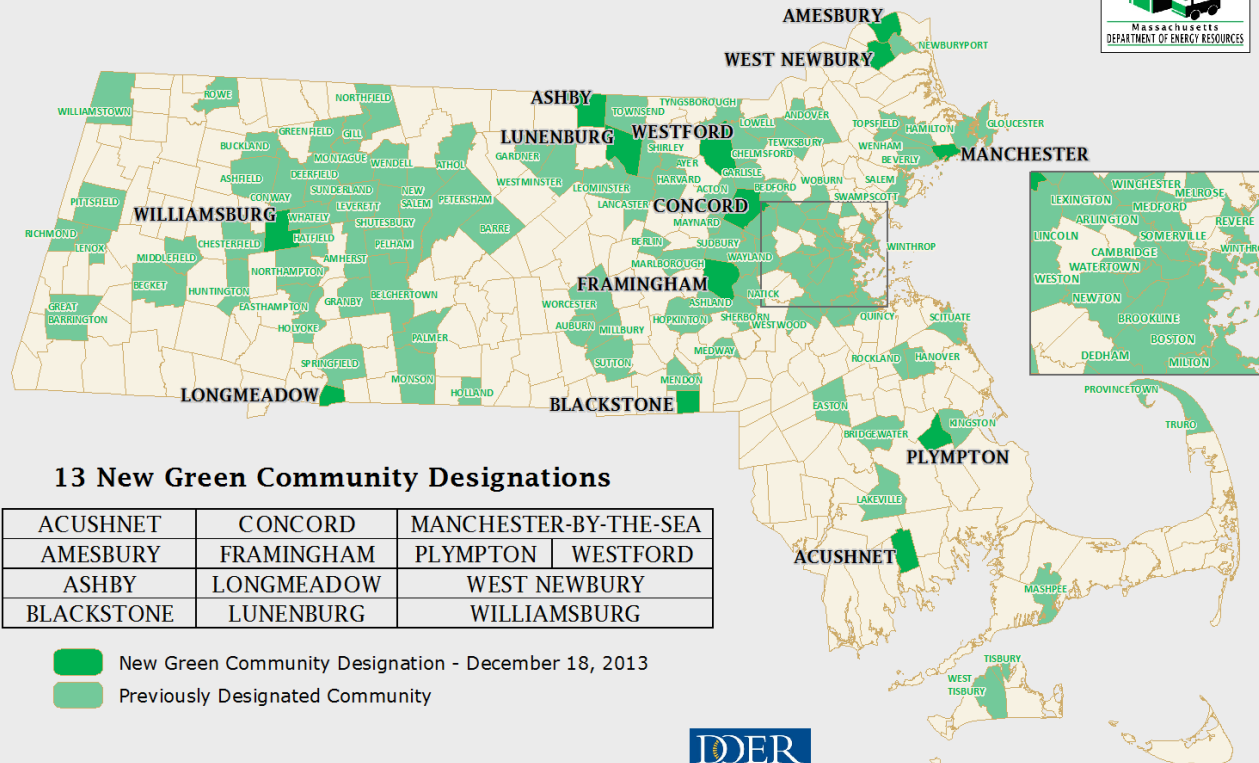


Informing Future Action

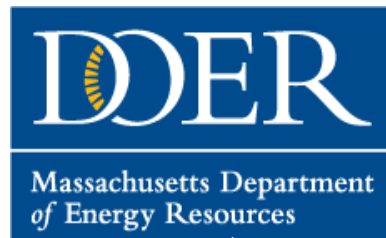
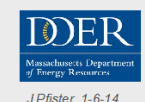


Impact of the Green Communities Program

GREEN COMMUNITY DESIGNATIONS REACH ONE HUNDRED TWENTY-THREE



25 Miles



Green Communities Designation and Grant Program – the 123

- Close to \$30M awarded
- 91 projects complete to date (68 designation, 23 competitive)
- Total Project Costs - \$26.5M
- Total GC grant funds used - \$17.07M
- Total Utility incentives - \$4.2M
- Projected annual savings (\$) - \$3.7
- 1,021 MA homes powered
- 2,315 cars removed from road (GHG)



Key Take Aways

- Having a energy data tracking system within a grant program makes it much more effective.
 - Willing & eager audience to work with data
 - Provides resources to towns to implement projects and save \$\$
- Easier in states with “green button” data format standardization



Next Steps

- Working to transfer data between Energy Star Portfolio Manager and MEI smoothly
 - DOE SEP program reporting requirements
- Working to allow utilities to access data for targeted marketing to specific high-energy users
- Renewable thermal energy pilot programs – biomass and heat pump technologies

Thank you!

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