The Seattle 2030 District

The Rise of a District

Matthew Combe
Program Director
The National Context

U.S. Energy Consumption by Sector (Historic / Projected)

Source: ©2010 2030, Inc. / Architecture 2030. All Rights Reserved.
Data Source: U.S. Energy Information Administration.
Current Boundary
Performance Targets – Existing Buildings

The 2030 Challenge for Planning: Existing Buildings

Source: © 2011 2030, Inc. / Architecture 2030. All Rights Reserved.
Performance Targets

National EUI compared to actual EUI

Regional Baseline

Regional Baseline

Energy Star

Seattle Public Utilities

Commute Seattle
New York’s GHG Inventory

2010 Citywide CO$_2$e Emissions by Sector

Total = 54.3 million metric tons

Buildings = 75%
- Residential
- Commercial
- Industrial
- Institutional

Transportation = 21%
- On-road transportation
- Transit

Wastewater, fugitive = 2%

Solid waste = 3%
- Solid waste

Streetlights and traffic signals = 0.1%

0.1%

37%

18%

8%

3%

2%

3%

0.1%
Water: A Deeper Dive

- Seattle, 2012:
  - 355 Events
  - 154 MG of sewage into our waterways
Green Stormwater Infrastructure
2025 Goal: Implementation Breakdown

Aggressive GSI Goals
The 2030 Water and Storm Water Calculator
Progress

144 Buildings
Progress

35% of the Total Square Footage
Aggregated Performance
Shared Buildings

23% Reduction in Energy
Aggregated Performance
Shared Buildings

7.5% Reduction in Water
Aggregated Performance
Shared Buildings

5.4%
Reduction in Transportation Emissions
Aggregated Performance
Total District

9% Reduction
in Energy
Aggregated Performance
Total District

2.5% Reduction in Water
Aggregated Performance
Total District

8.6% Reduction in Transportation Emissions
Benefits For Building Owners, Managers and Developers

- Utilize special Financing programs
- Access exclusive incentives, discounts & programs
- Improve competitive positioning
- Receive comparative analysis reports
Building Assessment
Portfolio Comparisons

Portfolio Energy Comparison: Averages

- Average of 2030 National Median EUI
- Average of Current EUI
- Average of 52030D EUI Target
Portfolio Comparisons

Portfolio Water Comparison: Averages

- Average of Baseline WUI
- Average of Current WUI
- Average of S2030D WUI Target
Portfolio Progress Report

ENERGY

% EUI Reduction (from Baseline) 30%

% EUI Reduction / Year Necessary to Reach 2015 Target (10%) 0%

WATER

% WUI Reduction (from Baseline) 20%

% EUI Reduction / Year Necessary to Reach 2015 Target (10%) 0%
Property Comparisons

Portfolio Buildings EUI Comparison: Averages

36% Reduction

Building One
- National Median EUI
- Current EUI
- S2030D EUI Target
- Seattle Average Office EUI

Building Two
- National Median EUI
- Current EUI
- S2030D EUI Target
- Seattle Average Office EUI

24% Reduction
Property Comparisons

Portfolio Buildings WUI Comparison: Averages

- **Building One**
  - Baseline WUI: 14
  - Current WUI: 10
  - 26% Reduction
  - 52030D WUI Target: 7

- **Building Two**
  - Baseline WUI: 14
  - Current WUI: 11
  - 15% Reduction
  - 52030D WUI Target: 9
Property Comparisons

Building Energy Comparison:
Offices > 900K Square Feet

EUI (kBtu/sf-yr)

Example | Building 1 | Building 2 | Building 3 | Building 4 | Building 5 | Average
--- | --- | --- | --- | --- | --- | ---
National Median EUI | Current EUI | S2030D EUI Target | Seattle Average Office EUI
Property Comparisons

Building Water Comparison:
Offices > 900K Square Feet

Water Data Last Updated: Oct-13
Property Comparisons

Building Energy Comparison:
Offices 500K - 700K Square Feet

Energy Data Last Updated: Nov-12

- National Median EUI
- Current EUI
- S2030D EUI Target
- Seattle Average Office EUI
Property Comparisons

Building Water Comparison:
Offices 500K - 700K Square Feet

Water Data Last Updated: Oct-13
Portfolio Analysis

Portfolio Buildings % EUI Reduction from Previous Year: Average

* Only represents performance of buildings with data for the performance period
Energy Load Profile Assessment
Seattle 2030 District Office Load Profile
Energy Load Profile Assessment
Seattle 2030 District Office Load Profile
Energy Load Profile Assessment
Seattle 2030 District Office Load Profile
Access Exclusive Incentives, Discounts & Programs
FirstView™ Reports

Energy Consumption By End Use

PEER Building Comparison

EUI by End Use

FirstView Diagnostics

<table>
<thead>
<tr>
<th>FirstView Category</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupant Load</td>
<td>Typical</td>
</tr>
<tr>
<td>Heating and Ventilation</td>
<td>Good</td>
</tr>
<tr>
<td>Cooling Efficiency</td>
<td>Good</td>
</tr>
<tr>
<td>Controls</td>
<td>Moderate Inefficiencies</td>
</tr>
<tr>
<td>Reheat</td>
<td>Unlikely</td>
</tr>
<tr>
<td>Gas Baseload</td>
<td>High</td>
</tr>
<tr>
<td>Data Consistency</td>
<td>Orderly</td>
</tr>
</tbody>
</table>
Smart Building and Energy Solutions

End Users
- Portal views
- MRO integration
- Trouble ticket generation

Accenture Smart Building Portal
- Continuous analytics
- Predictive algorithms
- Operational exceptions

Microsoft Cloud (Azure)
- 100,000+ set points, I/O points, lighting controls, and meter data managed 24x7
- 10,000+ algorithms run every minute

Research Buildings
- Buildings of all types and usage

Building Equipment
- Connect to BMS systems, meters, equipment, control systems, etc.
- Monitors data 24x7x365

Operations Center
- Energy Manager
- Facility Mgmt Engineer

MRO Personnel
- Executives

Automated Fault Detection, Operational Guidelines, Cloud-Based Control Services, M&V Validation, ECM Identification

Analytics Engine

Data Storage

Data Normalization

discount
Switch Automation

PILOT PROJECT STAGE 1
COLLECT ALL UTILITY DATA

TELCO

UTILITY METERS

GSM/GPRS MODEM

VPN

INTERVAL DATA TRANSMITTED DAILY

SEATTLE CITY LIGHT

FTP

SWITCH SMART HUB

PORTFOLIO MANAGER

FACILITIES MANAGER

SUSTAINABILITY MANAGER

free
Switch Automation

The Switch Solution
An Enterprise Operations Platform

- Single data repository, single web console
- Visibility into portfolio wide data and costs
- Spectacular time saving and data aggregation
- Decouples supplier & service providers
- Simple integration with Energy Star Portfolio Manager

switchautomation.com
@SwitchHQ
*For the first 10% of each District’s floor space
Seattle 2030 & Nissan Partnership

THAT INNOVATION ELECTRIFIES
The 2013 Nissan LEAF 

®
2030 Districts Network

Seattle 2030 District

Pittsburgh 2030 District

Denver 2030 District

Cleveland 2030 District

Los Angeles 2030 District

100M Square Feet Committed
More information

• For more information please visit our website at:
  2030districts.org/Seattle
• Follow us on Twitter @SEA2030
• matthewcombe@seattle2030districts.org
Thank you!