NREL

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Benefits of using simuwatt

• Streamlined high quality commercial energy audits
• Consistent, standardized and reusable data format
• Extensive library of building components (currently ~35,000 components available)
• Lower the cost of energy audits by 35%-75%
• Addresses EISA 2007 audit requirements
• Access data from the cloud/integrate with other apps
Who has used it?

Currently over 250 companies on the Beta Testers waiting list
History of the software

- Over 1000 people have attended the Energy Assessment Training Course since 2008
- Research institution/private sector partnership designed to capture efficiencies in the auditing process and create a self sustaining product
simuwatt Workflow

3D Mobile Data Collection Workflow

Analyze Possible Retrofits/ Energy Conservation Measures

Generate Report/ Store in the Cloud
Mobile Data Collection

- Standard forms
- Consistent data collection fields
- All data maps to energy model
- In process data validation
- No partial datasets
- 3D visualizations
- Intuitive navigation through forms
Energy Modeling Platform

- All data from mobile collection is mapped to create energy model
- DOE funded OpenStudio modeling platform
- Open source energy modeling platform with E+ backend
- Transparent calculation algorithms
- Calibration/Analysis can begin immediately following data collection activities
Building Component Library (BCL)

- Web repository of components with specifications that populate energy model inputs
- Can be accessed via an API
- Quick search and return times
- Currently accessible at bcl.nrel.gov
simuwatt Server

- Data warehousing
- Cloud computing/processing
- Access data from multiple tablets
- Share data with other users
- Reuse data for future audits
- Contribute data from multiple sources
Output Reports

- Data from the server can be queried to produce audit report
- Expandable to produce custom reports
- Export OpenStudio models
- Utility data summaries
- Leverage data for other efforts
Demonstration Results

- Ft Jackson, SC

Floorplan

simuwatt screenshot

Automatically generated OpenStudio model - rendering of building 10400

Ft. Jackson Bldg 10400

Calibration Report
Key Models to date

- Fort Bliss, TX
- Fort Jackson, SC
- Naval Support Activity Monterey, CA
- Tyndall Air Force Base, FL
- Air Force Academy, CO
This diagram illustrates the integration of various energy management tools and platforms, such as EISA 432 Tracking, FEMP (Federal Energy Management Program), simuwatt Server, Portfolio Manager, ESCOs, Utility, Future Energy Auditors, and Energy Managers. The diagram highlights how these components are connected to a central server, facilitating effective energy tracking and management across different sectors, including utilities and energy management teams.
Portfolio Level Strategy

Prioritize/screen sites (by EUI, walk through audits, etc.)

Use for
- Complex systems
- Missing interval data
- Required IGA
- O&M issues
- Need for precise costing
- BOM for implementation
- More...

ASHRAE Level 2-3 Audit
Product Launch

• www.simuwatt.com

• To see a video of the tool in use http://simuwatt.com/rd100.html

• Pricing inquiries can be made at the website
Thank you

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Backup Slides
Building Component Library

Components
- TMY & DD
- Lighting
- Plug Loads
- Construction
- Windows
- Water Fixture
- HVAC
- Occupant Type

Measures
- Calibration
- ECM
- HVAC Replace
- Incentives
- Utility Rates
- Reporting

BCL

Add via App

Add via Website
Analysis

Calibration

ECM Analysis

Optional

.simuwatt Server

Models Uploaded

Baseline Changes

.OSP + AMY

.OSP + TMY

simuwatt Server
Data Access and Reporting

simuwatt Server

API

- .DOC Report
- .OSM
- .CSV
- Custom
Multi-User Auditing Tracks

- HVAC Team
- Lighting Team (Plug Loads, Envelope, etc)

simuwatt Server

Reuse

RFP Proposal

IGA

Other: Assets, Retrofit, Retrocommissioning, M&V