



PERFORMANCE
SYSTEMS
DEVELOPMENT

ENERGY SAVINGS PLAYBOOK

Translating Energy Efficiency
Expertise Into Program Solutions



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Let's
Talk

Learn how PSD can help you meet
your energy savings targets

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Energy Savings Playbook Instructions

Do you want to take your energy efficiency initiatives to the next level? In this playbook, we outline key energy savings **challenges** and showcase our unique **solutions** for a winning strategy.

As you read through this playbook, look out for the **Challenges** and **Solutions** using the styling below.



Challenge: Highlighting the Energy Savings Challenge standing in the way of your goals



Solution: Outlining a Program/Technology Solution for a game winning strategy



Our Story

Since 1998, Performance Systems Development (PSD) has been at the forefront of innovation for energy efficiency programs, services, and software solutions.

PSD is a technology-enabled implementation firm that specializes in the design and delivery of innovative whole building, rebate, and performance-based programs. Solving problems faced by electric and gas utilities, as well as state and federal entities, PSD works with our customers to design and deliver cutting edge solutions for energy efficiency programs.

Our building science knowledge and technology solutions allow us to streamline delivery of simple prescriptive rebates through complex whole-building programs.

Translating building science into innovative programs and software

Leveraging the power of our Compass software platform, PSD designs and executes programs which consistently exceed program savings goals and achieve the highest levels of customer satisfaction. PSD's next generation data management solutions and experienced staff are helping our partners across the country to achieve deeper savings, higher quality data and reporting, and increased customer participation.

Whether you are looking to design or deliver a program, oversee the quality of your trade allies, or manage multiple data streams, we have the tools, services and experience to help you and your customers achieve success.

AFFILIATIONS





Residential Programs

Challenge: Homes are at the center of our lives, but the built environment is responsible for 40% of U.S. carbon emissions. Upgrading the efficiency of our housing stock makes homes healthier, saves on utility bills, and decreases environmental impact. Engaging stakeholders and transforming the market to more efficient building practices, deep retrofits, and equipment rebates through targeted programs is the name of the game.

Solution: PSD's expertise in building science and technology solutions optimizes the delivery of residential efficiency programs, ranging from equipment rebates to whole-home approaches. Our Compass platform and online portal streamline the rebate submission process, while PSD's RESNET and BPI experts inform our new construction and home performance solutions.



New Homes

- Flexible participation pathways: above code, ENERGY STAR®, prescriptive, and performance-based incentives
- Manage networks of builders, contractors, and HERS raters
- Data management platform integrated with REM/Rate and Ekotrope
- Affordable housing
- Manufactured homes



Existing Homes

- Multiple energy audit designs
- Trade ally marketing and sales support
- Single and multi-family homes



Equipment Rebates

- Prescriptive and custom modeled rebates
- Online portal submission directly from customer or trade ally
- Program design and incentive optimization

Commercial Programs



Challenge: Building owners, managers, architects, and engineers are faced with a myriad of difficult decisions when contemplating the energy efficiency aspects of new and existing buildings. Design operations can be challenging and inefficient while trying to adhere to rapidly evolving building codes. Cumbersome incentive and rebate processes of traditional programs can also lead to poor participation and inaccurate rebate and savings tracking.

Solution: PSD has a proven track record of implementing commercial program models incorporating early intervention of experienced consultants with design teams, managing effective engagement strategies, utilizing innovative modeling techniques, leveraging accurate and efficient data reporting, and implementing custom software solutions.

Program Features Include:

- In-house engineering project support
- Trade ally and customer engagement
- Custom software solutions and support
- Training and solutions for various rebate program types



Building Programs

- Benchmarking and advanced modeling
- New and existing commercial construction
- Custom design assistance
- Custom grant programs
- Multi-measure QA services
- Community engagement



Equipment Rebates

- Custom and prescriptive rebates
- Upstream, Midstream, and Downstream rebate programs



Pay-for-Performance

- Automated energy data analysis with real-time realization rates
- Integrated with multiple open source third-party NMEC methods

Support your entire portfolio of commercial and residential programs by leveraging PSD's **Compass** software platform

Software and IT Solutions

Challenge: Utilities, program administrators, and government agencies struggle to collect and make sense of all of the data needed to successfully manage an energy efficiency program. Necessary processes may not exist, logistical and software hurdles slow things down, and data analysis can be time-consuming and convoluted.

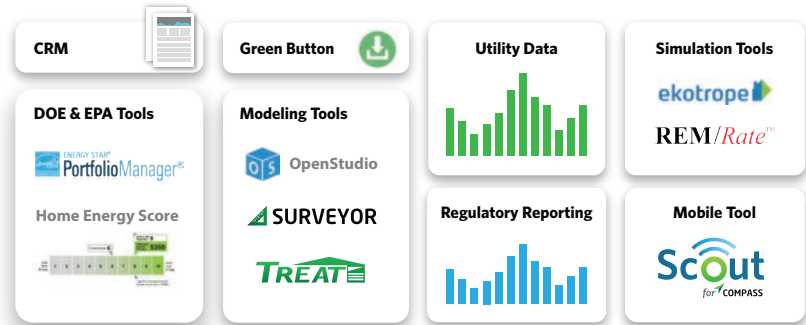
Solution: PSD's Compass program management platform supports 20+ program types nationwide, helping stakeholders achieve their portfolio needs and savings goals.

Supported Program Types:

- Whole Building
- Pay for Performance
- Energy Audit
- Custom Measure
- Direct Install
- Benchmarking
- Customer Engagement
- New Construction
- Upstream Rebate
- Midstream Rebate
- Downstream Rebate
- Retuning/Retro-commissioning
- Strategic Energy Management
- Loan Programs



Compass Integrations



PSD's software products are deployed in all 50 states and support 20+ program types throughout the USA





COMPASS

Compass is a cloud-based program management software platform connecting stakeholders via a streamlined, integrated end-to-end solution.

Compass Features:

- **Targeting and Outreach**
 - Building Targeting Analytics
 - Salesforce Integration
- **Customer Engagement**
 - Branded Rebate Website
- **Data Collection**
 - Compass Web Portal
 - Scout Mobile Tool
- **Energy & Resource Savings**
 - Deemed Savings
 - Modeled Savings
 - Performance Savings
- **Data Security**
- **Project Tracking & Reporting**
 - Customized Workflows with Automation
- **Calculations & Incentive Payments**
- **Program Portfolios**
 - Portfolio Management
 - Building Lifecycle Participation
- **Quality Assurance**
- **User & Trade Ally Management**
- **3rd Party Tool Integration**



Platform Extensions

Building Tracking: Building and meter data are automatically populated into Compass through integration with existing systems. This provides a first-of-its-kind tool for measuring, benchmarking, and targeting individual and portfolio-wide building performance and credentialing savings.

Savings Calculator: Integrated with Compass and wrapped around advanced building modeling tools, the calculator helps move stakeholders past standard deemed savings and into interactive calculations of different building systems. The calculator dynamically analyzes energy savings based on simplified modeling that is unique to individual buildings.

Mobile Tool: Our Scout mobile application tool for building audits, assessments, equipment installs, and quality assurance quickly collects and submits required information on-site. Scout can run on iOS and Android tablets, and supports direct data entry and file and photo uploads. It can run offline to support data collection in remote locations.





Equipment Rebate Programs



Challenge: The manufacturing, selection, and installation of energy efficient equipment is contingent on the market's ability to engage the appropriate stakeholders. Every party—from the product engineer and wholesaler, to the trade ally or end consumer—can significantly impact the energy usage of businesses and residential utility customers.



Solution: Programs must influence and incentivize the right stakeholders to increase adoption of energy efficient products and services. With the operational experience to engage all stakeholders throughout the equipment supply chain, PSD drives the market to manufacture, supply, and purchase the most efficient equipment available.




PSD's Compass platform combines with our upstream, midstream, and downstream program offerings to streamline implementation through ease of use and automated processes, providing a solution that engages organizational decision-makers while enabling abundant choice for consumers.




PSD's equipment rebate programs incorporate numerous advanced features that assure customer ease of use

- Automated customer account validation
- Electronic or mail-in application submission
- Online portal built within your website or as a separate webpage
- Paper check, gift card, and e-gift card processing
- Phone hotline for customer support

Energy Codes & Standards Adoption



Challenge: One issue hampering improvements in energy efficiency is a lack of federal leadership on energy codes and standard implementation. This leaves an opportunity for state and local entities to step in to develop and execute their own policies and implementation plans to advance efficiency in the building stock.




Solution: PSD brings a variety of stakeholders together to support the adoption of energy saving building codes and appliance standards. Services also include:


- Estimation of savings potential
- Incremental and lifetime cost analyses
- Expert testimony
- Identification of technical challenges to industry uptake with proposed solutions



Energy Code Compliance



Challenge: With rising baselines due to increasing stringency of building energy codes and lighting and appliance standards, it is becoming more challenging to administer cost-effective efficiency programs. While energy codes require higher levels of efficiency on paper, buildings are not reaping the full energy savings potential of these policies. Studies have shown that energy code enforcement and compliance are inconsistent due to a lack of awareness, training, and motivation on the part of some builders, contractors, design professionals, and code officials.



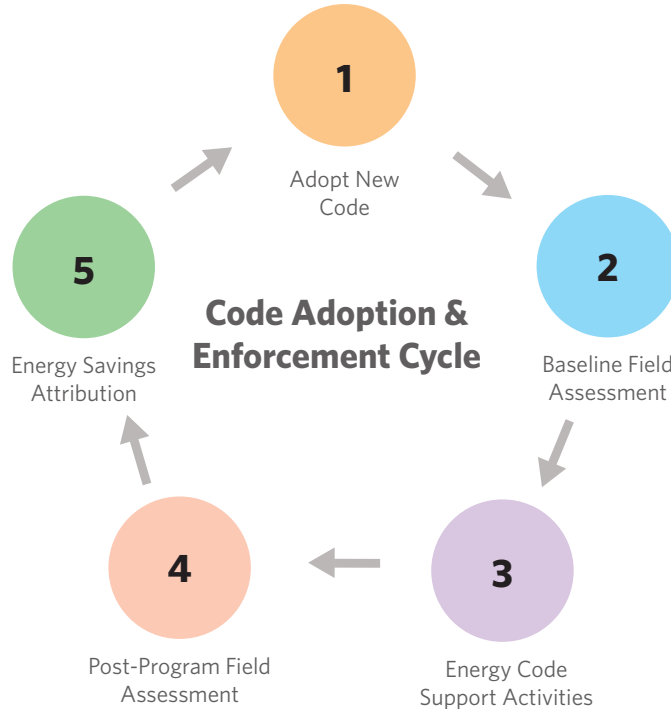
Solution: Noncompliance with energy codes results in a significant energy savings potential that utilities, states, and other program administrators can harness. PSD offers a variety of energy code compliance and enforcement support services to achieve real and measurable energy savings, including:

- Classroom training
- Webinars
- Compliance assistance tool and resource development
- Hands-on and in-field technical assistance
- Energy code compliance studies and assessments



Energy Code Support Services

New building energy codes are adopted by states and local governments in a recurring cycle of about every three years. Agencies and utilities can engage in the new code adoption process through sponsoring compliance baseline assessments, after which different energy service companies can provide compliance support. The parties can promote compliance follow-up studies to analyze the energy savings directly attributed to the support services. The cycle restarts when another energy code is adopted.



PSD Services

| | |
|----------|--|
| 1 | Code Stakeholders Collaborative Platform |
| 2 | Baseline Compliance Field Assessment |
| 3 | In-Person Training and Webinars Technical Support and Assistance Compliance Tool Development |
| 4 | Compliance Follow-up Field Assessment |
| 5 | |



Quality Assurance/Control Services (QA/QC)



Challenge: Proper quality assurance and control (QA/QC) is imperative to ensure builders and contractors have installed measures properly and that customer satisfaction goals are achieved. QA/QC is also vital for maintaining a positive relationship between the utility or organization responsible for a program and the final customer.

PSD offers several crucial elements that ensure quality measure installation:

- On-site trade ally mentoring
- Systematic reporting with recommendations for program improvement
- Documentation of health and safety issues
- Regular contractor trainings
- Identification of missed opportunities for additional measures
- Customer surveys
- Market rate and low income housing
- IT integration allowing real-time inspection tracking



Solution: Leveraging PSD's Compass portal for live inspection verification, we utilize a standardized framework for evaluating, scoring, and reporting on projects. PSD's approach is designed to provide equal emphasis on validating the accuracy of activity within a program, as well as enhancing the technical skills of program participants through mentorship and training. Our building science field staff maintain appropriate certifications, including BPI, RESNET, OSHA, AEE, and LEED.





HERS Rater QA Provider

Challenge: We recognize it can be difficult to find a HERS Rater QA Provider that truly champions your rating business. At the same time, we realize that, as a Rater, oversight by an accredited Rating Provider is required to maintain certification.

Solution: Find a Provider that understands what it takes to lead a successful business—not just perform quality assurance.

PSD's Provider team offers friendly, fast, and expert support to ensure your business is at the leading edge of the industry and to keep things running smoothly with your clients. As a RESNET-Accredited QA, Sampling, and Training Provider, and an EPA ENERGY STAR and WaterSense Partner, PSD offers Raters the services you need to grow and scale your business.

PSD's staff of recognized building science and home energy rating experts provide support to you and your team in a number of ways:

- Answers to your building science questions
- Accurate and thorough modeling support
- Access to educational webinars
- Discounts on PSD trainings, including ENERGY STAR and WaterSense
- Free membership to Northeast HERS Alliance (NEHERS)
- Free photo ID card upon certification



PSD
Raters

Become a Member

Become a PSD HERS Rater Provider member by visiting the link or contacting the email address below!

psdconsulting.com/psd-raters
sdavis@psdconsulting.com



Building Science and Energy Efficiency Training

Challenge: No matter where you are in the energy efficiency industry, there is always room for more education and development. Honing your techniques and knowledge is important for staying competitive in the job market, and improving professional skills provides opportunities for growth and additional revenue for you and your team.

Solution: PSD has trained and tested thousands of individuals on building performance and energy efficiency topics. Our current courses can be delivered in-person or through live webinar, and include the following commercial and residential building topics:

- HERS Rater Training and Certification
- BPI Building Analyst Certification
- ENERGY STAR New Homes Rater
- ENERGY STAR Multifamily New Construction Rater
- EPA WaterSense Inspector
- OpenStudio
- Building Re-tuning

Expert Training Team

PSD's experienced staff are affiliated with many of the leading professional organizations in the energy efficiency and building science industry, including ASHRAE, RESNET, and BPI.



Mike Turns is a leading expert in the International Energy Conservation Code (IECC), and has taught on national and regional energy codes for more than 10 years



As the Manager of PSD's HERS Provider and Provider Representative on the RESNET Board of Directors, **Emelie Cuppernell Glitch** has 15+ years of training, auditing, and rating experience



Proficient in over 20 different energy modeling software tools, **Chris Balbach** leverages his ASHRAE leadership and experience to provide training on improvement-driven modeling



Ethan MacCormick is a frequent presenter at RESNET conferences and a well-known building science expert, using his deep knowledge to train home performance contractors and Raters



Energy Engineering Services



Challenge: The programmatic delivery of energy efficiency needs to adapt to significant changes in the market, including digitalization and the rapid expansion of strategic electrification.



Solution: PSD staff are experts in applying cutting-edge technology and evolving standards to deployment services to help companies and state and federal agencies move forward into the future of energy efficiency. PSD's energy engineering team utilizes a cutting edge set of energy modeling, M&V and data management and visualization tools to support their work. Tools include OpenStudio, EnergyPlus, OpenEE Meter, ECAM, ASHRAE Inverse Modeling Toolkit, NMECR, R, PowerBI, Ruby and Python.

Add-ons & Additional Features:

- Commercial Building Benchmarking
- Building Re-tuning
- Measurement and Verification (M&V)
- Advanced Measurement and Verification (M&V 2.0)
- Commercial Building Energy Modeling
- Training and Workforce Development

Influencing The Future of Energy Efficiency

In a dynamic industry where standards and technology are constantly evolving, strong partnerships with leading research organizations have positioned PSD to influence the way energy conservation measures are modeled and implemented, with an emphasis on accurate data for systematic savings calculations and improvements.

PSD directly supports projects on:

- Policy Consulting
- Research
- Technology Development
- Program Support
- Training and Technical Support
- Standards Development

RESEARCH PARTNERS

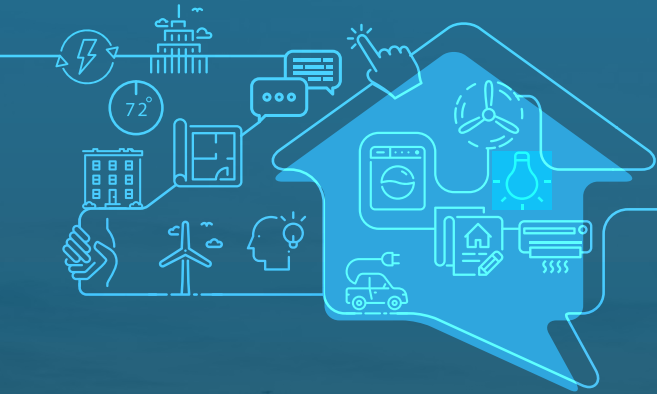


NYSERDA



OpenEfficiency
PLATFORM





Learn how PSD can help you meet
your energy savings targets

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