



# HOME FREE NEVADA

## Auditor and Contractor Program Guide

### Introduction and Goals

A drafty home, rooms that are too hot or too cold, and managing energy use and utility bills are all common issues for homeowners. A quality installation of a new heating or air conditioning system, buying replacement windows, or adding more insulation may fix part of the problem. But the way to better results is through an integrated "whole-house" approach that looks at your house as a system. Home Performance with ENERGY STAR®, a national program from the U.S. EPA and U.S. DOE, offers a comprehensive and quantitative, whole-house approach to improving energy efficiency, comfort, health, safety and durability at home, while helping to protect the environment.

### **HomeFree Nevada's Vision:**

To lead the nation in improving energy efficiency and conservation for residential properties across Nevada.

### **HomeFree Nevada's Mission:**

Establish and implement standards and quality assurance for auditors and contractors to create Comfortable, Energy Efficient, Healthy, Safe and Valuable residential environments and reduce our communities' carbon footprint and resource consumption.

### **HomeFree Nevada's Living Goals:**

- Living Goal 1:  
Create long-term, sustainable funding
- Living Goal 2:  
Provide and facilitate training and continuing education on an annual basis to auditors and contractors for improving residential resource efficiency.
- Living Goal 3:  
Provide career pathways for auditors and contractors for improving residential resource efficiency.
- Living Goal 4:  
Promote and educate the public on HomeFree Nevada performance standards and programs through partnerships with public, private and non-profit organizations.
- Living Goal 5:  
Create healthier communities through residential property improvements and increased resource efficiency.
- Living Goal 6:  
Work to streamline local government requirements for residential energy and conservation retrofits.



## **Program Partners and Organization**

HomeFree Nevada has applied to be a Section 501(c)(3) non-profit organization. Management decisions are made by the HomeFree Nevada Board of Directors. Day to day operations and coordination are made by the Program's Executive Director. Clark County and the cities of Las Vegas, North Las Vegas, and Henderson provide technical and financial support to the HomeFree Nevada Board and staff.

The program's community partners also include the following organizations:

- Green Chips
- University of Nevada, Las Vegas
- Sierra Club
- Nevada Conservation League;
- NV Energy
- Southwest Gas
- Southern Nevada Building Performance Professionals
- Southwest Energy Efficiency Partnership (SWEEP)
- Nevada State Bank
- Nevada Energy Star Partners;
- Private contractors and concerned citizens.

## **Auditor and Contractor Requirements**

To participate in HomeFree Nevada's Home Performance with Energy Star® program (HPwES), individuals must become a certified HERS Rater and a certified BPI Building Analyst. Training is made available through private, non-profit, and government providers. Training for these certifications are based upon a broad building science curriculum that presents a solid scientific foundation upon which inspectors and auditors can build an accurate understanding of modern buildings. Each topic includes an overview of the technology, examples of typical installations and their defects, procedures for performing audits, and guidelines for analyzing potential retrofits. A balanced approach to building performance is presented that addresses energy efficiency, building durability, and human health.

After completing these certifications field training and testing are required for both certifications. The approximate total cost of both the HERS Rater Certification and BPI's Building Analyst Certification. Once certified, expect to invest \$5,000 to \$15,000 in tools if planning to start your own business.

## **HomeFree Nevada Auditors**

Each Auditing firm must apply to HomeFree Nevada by completing a HomeFree Nevada Auditor Application Form and Participation Agreement, which specifies the following requirements:



Applicants must provide

- A Signed Participation Agreement with HomeFree Nevada
- Verification of RESNET Certified HERS Rater with a Provider and BPI Certified Building Analyst for individuals performing Auditing services
- A completion of HomeFree Nevada's Mentoring Program (beginning mid-2010)
- A copy of valid State, County and Local Business Licenses
- A copy of completed W-9 Form
- Verification of General Liability Insurance (\$1,000,000 minimum)
- Verification of Professional Liability Insurance (\$1,000,000 minimum)
- Verification of Automobile Liability (\$500,000 minimum)
- Workman's Compensation (as required by law; employer's liability - \$500,000)

*\* These requirements are subject to change.*

### HomeFree Nevada Contractors

Each firm providing Contracting services must apply to HomeFree Nevada by completing a HomeFree Nevada Contractor Application Form and Participation Agreement, which specifies the following requirements:

Applicants must provide

- A Signed Participation Agreement with HomeFree Nevada
- Verification of BPI Certified Building Analyst and pass RESNET Written Exam
- A copy of a Nevada Contractor's License and Bond
- A copy of valid State, County and Local Business Licenses
- A copy of completed W-9 Form
- Verification of General Liability Insurance (\$1,000,000 minimum)
- Verification of Professional Liability Insurance (\$1,000,000 minimum)
- Verification of Automobile Liability (\$500,000 minimum)
- Workman's Compensation (as required by law; employer's liability - \$500,000)

In addition, both Auditors and Contractors must agree to the following additional regulations:

- The auditor will abide by the U.S. Department of Housing and Urban Development regulations pertaining to equal employment opportunity.
- Work will be done in conformance with all building codes and zoning regulations.
- Follow HomeFree Nevada's approved comprehensive home energy audit process.
- Provide HFNV a copy of the following within five (5) business days after delivering it to the homeowner:
  - Audit Report including the Scope of Work given to each homeowner that presents cost-effective recommendations based on findings from visual and diagnostic inspections that meet consensus-based building science standards.
  - REM/Rate Building file for each job.
  - Copy of all signed contracts with homeowner.
- Follow program quality assurance procedures.
- Provide Homeowners a HomeFree Nevada Audit Report (User's Guide) on how to make their home perform optimally.



- Retain copies of assessment materials for a minimum of five years in case HFNV needs to reference documentation.
- Comply with Home Performance with ENERGY STAR's Identity Guidelines which describes how the ENERGY STAR marks, marketing graphics and name may be used.
- Pay HomeFree Nevada \$10 per every completed audit and \$25 per every completed retrofit job for the Home Performance Completion Certificate required to collect incentives paid to contractor/auditor or homeowners.
- That if the work performed by the contractor/auditor is found to be unsatisfactory by HFNV or if contract relations between the contractor/auditor, homeowner or other parties are found to be unsatisfactory, HFNV will follow disciplinary as described below.

### **Disciplinary Action and Termination of Participation**

Through ongoing training, mentoring and monitoring activities, HomeFree Nevada is committed to ensuring program compliance as well as supporting the contractor/auditor(s). With this in mind, HFNV will deploy a progressive discipline model to provide opportunities for contractor/auditor(s) improvement.

Progressive discipline will occur should any of the following incidences take place:

- Auditing inaccuracies are observed in reporting and/or during field inspections
- Contractor/auditor(s) makes recommendations without modeling the home's performance
- Contractor/auditor(s) deviates from scope of work
- Contractor/auditor(s) violates actions addressed in participation agreement to include improper use of HPwES brand, reporting, timeliness of reporting, excessive customer complaints etc.

### **Probationary period**

If inaccuracies are observed in contractor/auditor reports, HFNV will consult one-on-one with the contractor/auditor to assess situation and determine appropriate course of action. A contractor/auditor can be placed on probationary status when sponsor observes multiple deficiencies or a deficiency which impacts health and safety or if contractor/auditor receives a verified complaint.

During probationary status, the contractor/auditor must attend trainings and/or participate in mentoring activities targeted at correcting deficiencies, and agree to mentoring on the next three or more jobs. In order to be removed from probationary status, mentor must be confident that the deficiencies have been corrected. Contractor/auditor is responsible for cost associated with training, mentoring and additional monitoring activities. The number of training sessions required will vary depending on level of deficiency observed.

### **Suspension**

A contractor/auditor will be suspended if deficiencies continue to occur beyond probationary intervention. Once suspended, the contractor/auditor will be removed from the list of participating contractor/auditor(s) and no projects will be approved until contractor/auditor can demonstrate a commitment to the program's quality assurance. The contractor/auditor must demonstrate commitment to the program by meeting with sponsor and its designated representatives (such as a representative from the Board) and develop an action plan to improve performance. The implementation of that plan (training, monitoring and guidance) will be at the cost of the contractor/auditor.



## **Termination**

A contractor/auditor will be terminated from the program if reoccurring intervention is required due to ongoing inaccuracies and blatant disregard for program policies occurs. Once terminated, the contractor/auditor's name will be permanently removed from the list and no future projects will be referred. Contractor/auditor will no longer be authorized to use the Home Performance with ENERGY STAR branding.

## **HomeFree Nevada Energy Audit and Retrofit Programs**

Any comprehensive home energy audit and retrofit job, performed to the procedures for Energy Audits and Retrofits may be performed by HomeFree Nevada Auditors and Contractors. These jobs may be performed at the Auditing and Contracting firm's pricing for any qualifying home within the State of Nevada; rebates for these jobs are presently not available. Auditors and Contractors may pursue their own leads and sign applicants up using the HomeFree Nevada Request for Energy Audit and Retrofit Services Form; HomeFree Nevada job leads resulting from HomeFree Nevada marketing or the HomeFree Nevada website will be assigned based on an established list of Auditors and Contractors.

In addition to Home Performance with ENERGY STAR jobs, HomeFree Nevada recognizes additional rebate and incentive programs that are performed to HomeFree Nevada and Home Performance with ENERGY STAR standards, including:

- City of Las Vegas Green Building Program: Existing Residential Energy Audits and Retrofits



## **Energy Audit and Retrofit Job Procedures**

At a minimum, all qualifying HomeFree Nevada programs must consist of the following elements, as specified by HPwES:

- 1. Home Energy Audits in accordance to HERS/RESNET and BPI standards**
- 2. Develop a Report Listing Audit Results and Recommended Improvements**
- 3. Installation of measures**
- 4. Post-Installation Tests or “Test-out”**

After an auditor or a contractor is approved by HomeFree Nevada under a qualifying program to perform work, they may proceed, provided that they perform the work as specified. While each auditing and contracting firm may customize their own line of work, they must follow these minimum guidelines and procedures.

### **Home Energy Audits in accordance to HERS/RESNET and BPI standards**

#### **Homeowner Interview**

Auditors are first required to conduct an in-person or telephone interview to collect information about the home and homeowner’s concerns, motivations and goals. HomeFree Nevada collects information from homeowners that sign up through the HFN website and will provide this information to the auditor when available. At a minimum, auditors should discuss the following information:

- Age of home and square footage
- Years the homeowner has lived there and number of occupants.
- Remodeling, additions, window replacements, or other recent changes or modifications
- Basic information about HVAC system(s), type of fuel, and age of systems (if known)
- Swimming pool or spas –pump operation, heated or not, heating source(s)
- Utility bill information- annual power and gas bills, highest monthly power and gas bills
- Comfort complaints (cold rooms/hot rooms, drafts, moisture and humidity)

Although not required, Auditors may consider conducting a walk-through with the homeowner to ascertain additional information.

#### **Conduct Home Energy Audit**

Auditors will conduct a comprehensive Home Energy Audit to HERS/RESNET and BPI standards for the homeowner, covering the following areas:

- **Building Envelope Inspection**

The building envelope offers many opportunities for energy efficiency improvements.

Auditors are required to conduct an inspection of the building envelope:

- Collect basic information on the envelope of the home
- Note condition of external building envelope features (siding, trim, fascia, soffit areas, etc.) and check for moisture
- Identify the Building Envelope’s Thermal Characteristics, checking doors, windows, and thermal boundary
- Identify air leakage characteristics (Blower door test to standard, infrared camera; zonal pressure differential test as needed)
- Identify exterior wall insulation levels



- Identify renewable energy opportunities, if applicable

- **Heating, Ventilation, and Air Conditioning (HVAC) and Domestic Hot Water Systems Inspection**

The HVAC and hot water systems can offer dramatic comfort and energy savings opportunities. Therefore, participating contractors will perform a basic inspection of the HVAC and hot water systems in the home as follows:

- Determine number and type of thermostats and determine settings
- Inspect the heating system and its characteristics
- Inspect the air conditioning system and its characteristics (Duct Blaster and duct leakage testing)
- Determine air conditioning refrigerant charge and condition of air handler and coil
- Estimate AFUE of heating system and HSPF/SEER of heat pump/cooling system
- Inspect distribution systems, filters, insulation, and ductwork
- Inspect hot water system and its characteristics
- Inspect the combustion appliance zone (CAZ) for safety issues
- Inspect the living space for safety issues
- Inspect mechanical exhaust ventilation systems (if present in bathrooms, kitchens, garages, attics, or other spaces).

- **Instrumented Tests on Combustion Appliances, Combustion Appliance Zone (CAZ) and Living Space**

Performing these tests can help identify problems that affect the health and safety of the customer. Therefore, participating Auditors will perform diagnostic tests on combustion equipment including vented heating systems, water heaters and ovens, in accordance with the BPI Standards. This inspection includes:

- Combustion appliance and CAZ tests of vented heating systems, water heaters and ovens including
  - Testing for Carbon monoxide measurement at each appliance
  - Testing for gas leaks
  - Draft measurement and spillage evaluation for atmospherically vented appliances
  - Worse-case negative pressure measurement for each CAZ
- Ambient carbon monoxide readings.

- **Moisture Inspection**

Performing inspections for moisture can help identify problems that affect the health and safety of the homeowner. This inspection includes the following:

- Inspect basements and crawlspaces for moisture or moisture damage
- Inspect around exterior of foundation for signs of moisture
- Inspect attic for moisture deposition or damage on roof deck, rafters, joists, and insulation (wet or moisture-compacted insulation).
- Inspect condition of windows and look for signs of condensation or other conditions that could cause damage or affect durability.
- Inspect living space for evidence of high moisture levels in the living space, check for discoloration on walls behind headboards, furniture – corners of closets on



exterior walls, and other areas of stagnation and cold temperature for moisture deposition or damage and conditions that promote fungal growth

- **Appliance, Water Fixture, and Lighting Inspection**

Performing inspections of appliances and lighting can help identify home essentials that could potentially increase the costs of energy usage. This inspection includes the following:

- Review age and condition of major appliances and water fixtures.
- Inspect high-use lighting areas for any obvious opportunities to upgrade old lighting with CFLs and energy efficient fixtures.

### **Develop a Report Listing Audit Results and Recommended Improvements**

Once a HFN Auditor completes an audit and subsequent analysis of tests and findings, they are to review the findings of the audit with the homeowner. This is the opportunity to present the homeowner with the improvement opportunities and energy conservation measures discovered during the Audit and determine the solutions for improving the performance of the home. Therefore, the participating Auditor will discuss inspection findings and present a recommended scope of work to the homeowner.

At a minimum, the following elements are required to be included in a HFN Audit Report provided to a homeowner after the Audit has been completed and can be completely customized to the auditing firm's specifications:

- A cover page and/or introduction page(s) that include the following, at a minimum:
  - Participating Auditor name, contact information, and name of technician completing the Audit.
  - Homeowner's address
  - Date Audit was performed
  - HomeFree Nevada AND Home Performance with ENERGY STAR logo
- Required documentation must be included, either as an appendix or as a part of the Audit Report
  - A signed audit agreement between the auditing company and the homeowner
  - A RESNET Home Energy Rating Standard Disclosure Form
  - The home's rating information
    - Include the Home Energy Rating Certificate (HERS Rating)
    - Include the Home Performance with ENERGY STAR Energy Rating Certificate
- The body of the Audit Report containing the existing conditions, including REM/Rate Reports as specified (included as appendices for homeowner):
  - Air leakage visual inspection or diagnostic results.
    - Include Air Leakage REM/Rate Report
  - Insulation levels for walls, attic, rim-joists, and foundation (crawl, basement, or slab).
  - Approximate age and condition of HVAC equipment (heating, cooling, and ventilation fans), water heating equipment, and condition of exhaust flues for HVAC or water heating equipment that consumes fossil fuel.



- Type and condition of windows and doors.
- Duct system visual inspection findings.
- Approximate age and condition of appliances.
  - Include Lights and Appliances Summary REM/Rate Report
- Any signs of moisture deposition, building performance failures or conditions affecting the durability of the home.
- Results of tests related to the use of combustion appliances (draft, spillage, carbon monoxide, combustion appliance zone (CAZ) depressurization and gas leak testing).
- A summary of the home's approximate environmental impact
  - Include Emissions REM/Rate Report
- A set of recommended energy conservation measures that is reasonably comprehensive in identifying measures that save energy, address combustion safety, comfort, moisture deposition, durability or other building performance problems. Recommendations in the comprehensive work scope must address air leakage between the house and attached garage due to the potential for infiltration of carbon monoxide and other fumes. An estimate of current energy costs and potential energy savings from recommended improvements and improvement installation costs should also be included.
  - Include Action REM/Rate Report
  - Include Improvement Analysis REM/Rate Report
- A list of incentives and financing options for energy conservation measures, including tax credits, loans, rebates from NV Energy, Southwest Gas, Southern Nevada Water Authority, program sponsors, or other entities.
- A list of HFN Contractors approved by HFN to perform the recommended energy conservation measures. Auditors that have agreements with HFN approved Contractors may recommend them to perform the work; however, the Auditor must disclose to the homeowner that any HFN Contractor may be used.

Upon completing the discussion of the Audit Report with the homeowner, a copy of each Audit Report must be submitted to HFN electronically to the appropriate HFN staff or through the HFN website and to any other HFN approved program that requires such a report. HFN requires an administrative fee of \$10 for each report that is submitted through the program, to be paid on the HFN website. Auditors are required to keep records of all HFN reports for a period of 5 years.

### **Installation of measures**

HomeFree Nevada will provide a list of HFN Contractors approved by HFN to perform the recommended energy conservation measures to each Auditor to include in the Audit report. If HomeFree Nevada staff is available, they will meet with the homeowner and Auditor to make Contractor arrangements based on the scope of work established by the Auditor and homeowner. After arrangements are made, an agreement will be made between the homeowner and Contractor to perform the measures specified in the scope of work, based on the HomeFree Nevada Installation of Measures Guidelines. All installed measures will be in accordance with industry best practices.



## **Post-Installation Tests or “Test-out”**

When a participating contractor completes home performance improvements for a customer, the Auditor that performed the Audit will perform the post-installation tests and inspections described in this section, and enter the results in a “HomeFree Nevada Post-Installation Tests and Inspections” Form.

## **Minimum Post Installation Test Requirements**

The required post-installation tests will depend upon the scope of work:

- Confirmation that measures are properly installed
- A Blower Door test will be completed after installation of any of the following measures:
  - Enclosed cavity insulation representing more than 15% of the total building shell area.
  - Air sealing.
  - Sealing of ductwork outside the building envelope.
  - Replacement of atmospherically vented combustion appliance with sealed combustion appliance (due to removal of an exhaust appliance from the home).
- Minimum house ventilation requirement calculation will be performed whenever changes to the building shell requiring a blower door test have occurred to ensure that the home is receiving adequate outside air per BPI Standards
- Combustion appliance tests on all combustion equipment including vented heating systems, water heaters, and ovens, in accordance with BPI Standards, will be completed whenever changes to the building envelope and/or heating system have occurred. This inspection includes all of the following tests:
  - Carbon monoxide measurement at each appliance (including ovens).
  - Draft measurement and spillage evaluation for atmospherically vented appliances.
  - Worst-case negative pressure measurement for each CAZ.
- Inspection and testing of orphaned water heaters: water heaters may not be left venting alone into a previously shared chimney without ensuring the chimney meets appropriate NFPA requirements under the new condition and the water heater has been tested and passed all required combustion safety tests (spillage, draft, CAZ depressurization).
- If a new central air conditioner, heat pump, or furnace is installed, then the Contractor will provide a commissioning report documenting that the installation met the ACCA HVAC Quality Installation Specifications

If any of the tests or inspections show the need for corrective action, the Contractor can record the action item(s) in the Form or postpone completing the Form (including having the customer sign it) until those corrective actions have been made. Each job is not considered complete until HomeFree Nevada has received a signed HFN Post-Installation Tests and Inspection Form that indicates that all standards have been met (i.e., all tests and inspections have been passed successfully) and that no further actions are required.

At the conclusion of the test-out, each homeowner must sign and receive a copy of the HomeFree Nevada Post-Installation Tests and Inspections Form signifying their agreement that the job has been completed.



## **HOME FREE NEVADA**

### **Homeowner Interview**

Participants in the HomeFree Nevada program may sign up at the HomeFree Nevada website (<http://www.homefreenevada.org>). To request a comprehensive home energy audit, homeowners fill out the online questionnaire or form, which appears below under the HomeFree Nevada Home Energy Audit and Retrofit Request for Services. Homeowners may also sign up with an Auditing firm actively marketing the HomeFree Nevada program.

All Auditors are required to conduct an in-person or telephone interview to collect information about the home and homeowner's concerns, motivations and goals. HomeFree Nevada also collects information from homeowners that sign up through the website and will provide this information to the auditor when available. At a minimum, auditors should discuss the following information:

- Age of home and square footage
- Years the homeowner has lived there and number of occupants.
- Remodeling, additions, window replacements, or other recent changes or modifications
- Basic information about HVAC system(s), type of fuel, and age of systems (if known)
- Swimming pool or spas –pump operation, heated or not, heating source(s)
- Utility bill information- annual power and gas bills, highest monthly power and gas bills
- Comfort complaints (cold rooms/hot rooms, drafts, moisture and humidity)



# HOME FREE NEVADA

## Request for Energy Audit and Retrofit Services

To receive a comprehensive home energy audit and retrofit, please submit the following survey.

### Homeowner Information

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_

Zip Code: \_\_\_\_\_

Phone number: \_\_\_\_\_

Email address: \_\_\_\_\_

### Information about my home

What year was your home constructed? \_\_\_\_\_

How long have you lived in your home? \_\_\_\_\_

How many people live in your home? \_\_\_\_\_

What is the approximate square footage of your home? \_\_\_\_\_

How many stories is your home? \_\_\_\_\_

How many air conditioning units does your home have? \_\_\_\_\_

If known, how old are your air conditioning units? \_\_\_\_\_

Does your home have a swimming pool? YES / NO

Does your home have a spa? YES / NO

Please provide information on any recent modifications or energy efficient improvements you have made to your home.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



### **Energy bill information**

What is the highest monthly electric bill you have received in the past year? \$ \_\_\_\_\_

If you have natural gas service, what is the highest monthly gas bill you have received in the past year?

\$ \_\_\_\_\_

Approximately how much do you pay per year for electricity? \$ \_\_\_\_\_

Approximately how much do you pay per year for natural gas? \$ \_\_\_\_\_

### **HomeFree Nevada information**

Of the approved HomeFree Nevada energy auditing companies listed, please indicate your preference for energy Auditor services. If you have no preference, please leave blank or indicate "No Preference"

Company name: \_\_\_\_\_

How did you hear about HomeFree Nevada? \_\_\_\_\_

### **Disclaimer**

HomeFree Nevada requires each Auditing and Contracting company to provide homeowners with a RESNET Home Energy Rating Standard Disclosure Form and other disclosure and disclaimer forms prior to an energy audit and retrofit.

Energy efficient retrofits to homes may sometimes require a permit by the local jurisdiction in which you live in and could require an inspector to ensure work was properly installed and completed. These inspectors could potentially find and document other code issues while inspecting your home. In addition, HomeFree Nevada and its program partners may require additional observation of energy audit and retrofit practices as a part of its quality assurance program. In the event your home is selected for a quality assurance review, you will be informed and may choose not to allow the quality assurance observations to take place.



# HOME FREE NEVADA

## Installation of Measures Guidelines

When presenting homeowners a scope of work based on the Auditor's recommended measures, certain considerations and priorities must be made between the Auditor, Contractor, and homeowner. Accordingly, the following guidelines and priorities should be discussed with the homeowner:

### Homeowner Preference

For all retrofit jobs, the customer must make the final decision on modifications to the home. The customer, however, may rely on the relationship, trust, and judgment of the Auditor and Contractor and the information provided to them in the Audit Report. The Auditor and Contractor must ultimately defer to the homeowner's preferences for the installation of measures to the home.

### Financing

When determining which retrofit measures to perform, consider the following:

- What incentives will be used?
- How much will the homeowner contribute?
- Will loans be used?

### Measures

In developing the scope of work, the following measures should be considered.

- Health and Safety—immediate (any measure that threatens the health and safety of the home's occupants)
- Health and Safety—long term (any measure that could threaten the health and safety of the home's occupants over extended periods of time)
- Building envelope—measures to seal the home
- Energy conservation—measures involving lighting, appliances
- Indoor environmental quality—measures that seal and improve the HVAC system
- Water conservation measures
- Renewable energy production



## HOME FREE NEVADA

### Incentives and Financing for Retrofits

When presenting homeowners a HFN Audit Report, a required element is a list of incentives and financing options for energy conservation measures, including tax credits, loans, rebates from utilities, program sponsors, or other entities. This list and any descriptions may be completely customized to the auditing firm's specifications. This list, although not comprehensive, includes incentives and financing options that should be considered:

- Tax credits
  - Federal- Residential Energy Efficiency Tax Credit
  - Federal- Residential Renewable Energy Tax Credit
- Loans and Mortgages
  - Green Chips- Green Chips Revolving Loan Fund
  - Federal Housing Administration- Energy Efficient Loans
  - Veterans Administration- Energy Efficient Mortgage
  - Private lenders- Energy Efficient Mortgages
- Rebates
  - City of Las Vegas- Retrofit Rebate (with homeowner match)
  - NV Energy- RenewableGenerations
    - SolarGenerations
    - WindGenerations
  - NV Energy- Refrigerator Recycling
  - NV Energy- Cool Share
  - NV Energy- Efficient Pool Pumps
  - NV Energy- ENERGY STAR lighting
  - NV Energy- Air Conditioning tune-up
  - Southwest Gas- Energy Efficient appliance rebate
  - Southwest Gas- STAR: Solar Thermal Advantage Rebate
  - SNWA- Water Smart Landscape rebate
  - SNWA- Pool cover rebate
  - SNWA- Smart Irrigation Controller Rebate
  - State of Nevada- Energy Efficient Appliance Rebate Program (April 2010)

#### Sources:

[www.dsireusa.org](http://www.dsireusa.org)

[www.nvenergy.com](http://www.nvenergy.com)

[www.southwestgas.com](http://www.southwestgas.com)

[www.snwa.com](http://www.snwa.com)

<http://www.energy.state.nv.us/>



## **HOME FREE NEVADA** **Approved Contractor List**

When presenting homeowners a HFN Audit Report, a required element is a list of actively participating HFN Contractors approved by HFN to perform the recommended energy conservation measures. Auditors that have agreements with HFN approved Contractors may recommend them to perform the work; however, the Auditor must disclose to the homeowner that any HFN Contractor may be used. This list and any descriptions may be completely customized to the auditing firm's specifications. The use of company logos in HFN Audit Reports is allowed provided the company grants permission of the use of the logo to the Auditor. The list below includes all HomeFree Nevada approved contractors and their area of specialization and may be copied directly into HFN Audit Reports:

### **Distinct Energy Performance**

2905 Lake East Dr Ste 110  
Las Vegas, NV 89117  
702.256.SAVE (7283)  
<http://www.distinctenergyperformance.com>  
[info@distinctenergyperformance.com](mailto:info@distinctenergyperformance.com)

### **Global Warming and Cooling**

3995 W Quail Ave, Ste A  
Las Vegas, NV 89118  
702.997.4818

### **Signature Custom Homes**

801 S. Rancho Dr Ste E-4  
Las Vegas, NV 89106  
702.671.6000  
<http://www.signaturehomes.com>  
[wecare@signaturehomes.com](mailto:wecare@signaturehomes.com)



# HOME FREE NEVADA

## Post-Installation Tests and Inspections

### Homeowner Information

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Phone number: \_\_\_\_\_

Email address: \_\_\_\_\_

Auditing Firm: \_\_\_\_\_

Auditor: \_\_\_\_\_

Contractor: \_\_\_\_\_

Test out Date: \_\_\_\_\_

### Recommended Measures Properly Installed

- |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Attic Air sealing<br><input type="checkbox"/> Baseboard Air Sealing<br><input type="checkbox"/> Windows/Doors Air Sealing<br><input type="checkbox"/> Exterior Wall to Garage Air Sealing<br><input type="checkbox"/> Attic flat insulation<br><input type="checkbox"/> Attic slope insulation<br><input type="checkbox"/> Attic kneewall insulation<br><input type="checkbox"/> Exterior wall insulation<br><input type="checkbox"/> Attic stairs insulation<br><input type="checkbox"/> Attic Vent | <input type="checkbox"/> Window Replacement/Repair<br><input type="checkbox"/> Window Film/Solar Screen<br><input type="checkbox"/> Door Replacement/Repair<br><input type="checkbox"/> Heating system Replacement/Repair<br><input type="checkbox"/> A/C Replacement/Repair<br><input type="checkbox"/> Air Handler Replacement/Repair | <input type="checkbox"/> Duct Sealing Replacement<br><input type="checkbox"/> Insulation Replacement<br><input type="checkbox"/> Hot Water System Replacement/Repair<br><input type="checkbox"/> Hot Water System Blanket<br><input type="checkbox"/> Pipe Insulation<br><input type="checkbox"/> Exhaust fans<br><input type="checkbox"/> Exhaust vents rerouted/insulated |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

New Appliances: \_\_\_\_\_

New Lighting: \_\_\_\_\_

Health and Safety: \_\_\_\_\_

Renewable Energy: \_\_\_\_\_

Other Measures: \_\_\_\_\_

Items for Follow up: \_\_\_\_\_



### Blower Door Test/Ventilation Compliance

Method Used to Determine Building Leakage Standard: \_\_\_\_\_

Building Leakage (Test in) \_\_\_\_\_ (Test Out) \_\_\_\_\_

Pass                  Pass with Ventilation Recommended                  Fail

Action Required: \_\_\_\_\_

Airflow Test Result \_\_\_\_\_ Pass    Fail

Action Required: \_\_\_\_\_

Duct Leakage Test: \_\_\_\_\_

Duct Test Result (or attach): \_\_\_\_\_

Pressure Pan Average (Test in) \_\_\_\_\_ (Test Out) \_\_\_\_\_

Action Required: \_\_\_\_\_

### Combustion Appliance Zone Tests

#### Worst Case Test Results

	Spillage		Draft	CO
Heating System	Pass	Fail	_____pa	_____ppm
Domestic Hot Water System	Pass	Fail	_____pa	_____ppm
Other	Pass	Fail	_____pa	_____ppm

Action Required: \_\_\_\_\_

#### Natural Condition Test Results

	Spillage		Draft	CO
Heating System	Pass	Fail	_____pa	_____ppm
Domestic Hot Water System	Pass	Fail	_____pa	_____ppm
Other	Pass	Fail	_____pa	_____ppm

Action Required: \_\_\_\_\_



CAZ Tests

	CO Ambient	Base Pressure	Worst Case Pressure	Net CAZ Depress.	CAZ limit	Flue	
CAZ 1:	_____	_____	_____	_____	_____	Pass	Fail
CAZ 2:	_____	_____	_____	_____	_____	Pass	Fail

Action Required: \_\_\_\_\_

Gas Leakage

Test: No Leaks      Leaks Detected as Noted \_\_\_\_\_

Carbon Monoxide

	Kitchen	Main Living	Other ppm
Ambient CO	_____	_____	_____
Oven CO	_____	_____	_____

Action Required: \_\_\_\_\_

Other

Dryer Vent:    Electric                  Gas Properly Vented                  Gas Improperly Vented

Action Required: \_\_\_\_\_

Other Tests/Notes:

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**Homeowner and Auditor/Contractor Statement and Signature**

I attest that all of the information above is correct and to the best of my knowledge.

Auditor/Contractor Signature: \_\_\_\_\_

I attest that I am the owner of the property specified above and that all materials and equipment included in my retrofit were furnished and installed by the HomeFree Nevada Contractor, and that work has been completed pursuant to the Scope of Work.

Homeowner Signature: \_\_\_\_\_