

Executive Summary

Updates to GreenPoint Rated Version 7.0

New Single Family and Multifamily Programs

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GreenPoint Rated Version 7.0 was released on Oct. 27, 2016, and will take effect beginning Jan. 1, 2017. Version 7.0 sets a new standard in California for green and healthy homes. The updated version of California's most trusted green home certification system awards points for newly built homes that incorporate the leading green building practices and save energy, water, and greenhouse gas emissions far beyond homes constructed to the minimum building code standards.

GreenPoint Rated 7.0 clarifies existing code, incorporates upcoming code changes, and anticipates future code. CALGreen residential and non-residential mandatory measures are still prerequisites for GreenPoint Rated. The CALGreen checklists have been updated to reflect the 2016 California Green Building Code.

Here is an overview of Version 7.0 revisions:

- Deleting measures that have become code-required
- Addressing CALGreen mandatory measures
- Adding new measures for current best practices
- Improving and clarifying definitions of current measures
- Clarifying criteria for qualification of current measures

Version 7.0 of GreenPoint Rated also breaks new ground. It defines new pathways for how to build next-generation energy-saving homes and multifamily buildings, including zero net energy homes and low-carbon, all-electric homes that avoid fossil fuels.

See below for full details on the Version 7.0 updates, methodology, and new measures.

GreenPoint Rated Version 7.0 and California's Climate Goals

With more than 43,000 certified units, GreenPoint Rated has emerged as the most trusted home rating system in California. Now that California has updated California Codes and Regulations and Building Energy Efficiency Standards (Title 24, Part 6) with stronger minimum standards, GreenPoint Rated is being updated in tandem. With Version 7.0, GreenPoint Rated will continue to reflect the leading edge of green building practices and certify buildings that go above and beyond CALGreen code.

As California sets its sights on net zero energy and low carbon homes, GreenPoint Rated provides a pathway for the market to achieve these goals. This Executive Summary provides an overview of the changes and updates to Version 7.0.

Version 7.0 adds new measures to support our low-carbon goals for building in California, as well as respond to climate change issues. Overall, Version 7.0 represents minor updates that build upon the significant update completed for Version 6.0. Updates include revised measures and energy compliance pathways to align with the 2016 California Code of Regulations (California Building Code), which will be effective January 1, 2017.

While the Existing Home Rating Systems for both single family and multifamily need to be updated, Version 7.0 update is focused on the New Home Rating Systems. The existing home systems will undergo a separate review process at a later date.

How Can GreenPoint Rated Version 7.0 Help You?

For single-family builders: Increase sales and differentiate your high-quality homes from others that are built only to code-minimum standards. Meet the needs of consumers who increasingly demand energy-efficient, healthier, high-performing homes.

For affordable housing developers: Maximize your tax credits with a green-certified building and gain access to attractive green financing programs. Meet your sustainability and tenant goals with GreenPoint Rated measures that promote health, efficiency, community design, and social equity.

For local governments: Adopt GreenPoint Rated as a cost-effective, plug-and-play policy to meet your climate action plan goals (because baseline building codes are not strong enough). Requiring GreenPoint Rated certification for new home construction adds verification to the construction and permitting process: Third-party raters inspect the work to verify that CALGreen measures and above-code measures have actually been installed. This relieves municipal staff of additional inspection burdens. Finally, track and quantify the benefits of your green building policies with the GreenPoint Rated Climate Calculator, which estimates avoided GHGs for all projects in your jurisdiction.

Program Checklists: Version 6.1 and Version 7.0

The current checklists, GreenPoint Rated New Home Single Family (NHSF) and New Home Multifamily (NHMF) Version 6.1, are appropriate for projects permitted under the 2013 California Building Code. A project permitted under the 2016 Code will use the New Home Single Family Version 7.0 or New Home Multifamily Version 7.0 system.

GreenPoint Rated Design Changes

The entire Version 7.0 review and update process included extensive stakeholder outreach and input from subject matter experts, as well as public comment periods. The process consisted of two public comment periods of the proposed Version 7.0 GreenPoint Rated program for the New Home rating systems only. Build It Green has completed a checklist for both single family and multifamily new homes rating systems to correspond with the 2016 California Green Building and Energy Efficiency Standards.

- **Energy evaluation.** GreenPoint Rated establishes the energy performance threshold based on a cost-benefit analysis to meet and exceed code, as well as alignment with the program criteria of various stakeholders. Historically, the threshold has aligned with the energy performance thresholds of the Investor Owned Utilities. That said, as we move toward lower energy use and lower carbon homes, GreenPoint Rated is evolving and has developed four energy compliance pathways. Each of the four pathways will earn at least the minimum 25 points for compliance.
 1. GreenPoint Rated, as historically done, has a compliance pathway using a percentage compliance margin over the current, or in this case, 2016 Energy Code. This is for dual fuel homes.
 - Single Family: 10% compliance margin over 2016 Title 24
 - Multifamily:
 - Low rise – 10% compliance margin over 2016 Title 24

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- High rise - 10% compliance margin over 2016 Title 24
 - Photovoltaics cannot be used to meet compliance. Photovoltaics may be used to exceed the Energy Code budget
2. In addition to the compliance margin, GreenPoint Rated will continue to provide a pathway for an all-electric home. The approach for compliance, for **both single family and multifamily**, is as follows:
 - 2% - 5% compliance margin (pending analysis)
 - Prescriptive requirements: water heating that includes either the installation of a HPWH with an energy factor of 3.2 or greater or a solar thermal system with a minimum 30% solar fraction
 - All electric homes must a photovoltaic system
 - Photovoltaics may be used to meet compliance
 3. Whole Building Energy Use Reduction
 - GreenPoint Rated will provide a pathway to zero net energy as a third alternative for program compliance. This alternative will conceptually require a project to demonstrate a percentage reduction over whole building use based on the GreenPoint Rated Energy and Water Calculator. It is anticipated that the percentage will be in the range of 25%.
 4. Energy Design Rating (EDR)
 - GreenPoint Rated will develop a compliance pathway using Energy Design Rating (EDR) provided through the compliance software. The EDR is the sum of the annual TDV energy consumption for energy use components included in the performance compliance approach for the Standard Design Energy Provisions of the California Green Building Standards Code and the annual TDV energy consumption for lighting and components not regulated by Title 24, Part 6 (such as domestic appliances and consumer electronics) and accounting for the annual TDV energy offset by an on-site renewable energy system. The Design Rating is calculated by Compliance Software certified by the Energy Commission. This metric moves towards a whole building metric as well as the above option.
- **CALGreen.** CALGreen residential and non-residential mandatory measures are still prerequisites for GreenPoint Rated. The CALGreen checklists have been updated to reflect the 2016 California Green Building Code. For New Home projects, points will continue to be allocated for CALGreen compliance as follows: four points (one in each Energy, IEQ/Health, Resources, and Water). Although GreenPoint Rated is a residential rating system, the non-residential standards have been included in the prerequisites for buildings where required, whereby the GreenPoint Rater will verify CALGreen Measures to facilitate verification of CALGreen compliance. The commercial portion of the building is not part of the GreenPoint Rated certification. This verification is not intended to replace code inspection (enforcement), unless authorized by the authority having jurisdiction. There are very minor changes to CALGreen from the 2013 standards. Some of the changes include reduction in flow rater for lavatory faucets, increase in recycling rate for C&D waste to 65%. Please see updated CALGreen checklists for Residential and Non-Residential.
 - **Prerequisites.** Below is a summary of the prerequisites for New Home rating systems. There is no change in prerequisite measures, with the exception of changes within the CALGreen mandatory measures for code compliance. ASHRAE 62.2 - 2016 applies to all residential occupancies.

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Table 1. Summary of Prerequisites

Measure Category	New Home Single Family	New Home Multifamily
CALGreen Residential	X	X
CALGreen Non Residential		If required
Energy Performance	See above	See above
GreenPoint Rated Checklist on Blueprints	X	X
ASHRAE 62.2-2016	X	X
Durable Roofing		X
Green Appraisal Addendum	X	X
Minimum points in each category	X	X
Minimum Total Points	50	50

- **Other Measures.** The annotated checklist identifies anticipated changes to specific measures for both Single Family and Multifamily. These changes have been vetted with subject matter experts and informed by the appropriate codes and standards.

Below is a brief description of new measures that are being proposed for the version 7 checklist. Please see the pdf of Single Family and Multifamily Checklists.

- **G2.3.2. WaterSense Toilets- 1.1 gpf with a Maximum Performance (MaP) Threshold of No Less Than 500 Grams.** An additional point for a high performance 1.1 gpf toilet.
- **G6. Thermostatic Shower valve or tubspout.** One point for installation of thermostatic shower valves or anto-diverting tubspout with TSV in all bathrooms. This technology helps reduce water wasted after hot water arrives at the fixture (behavioral waste).
- **H9. Low Global Warming Potential Refrigerants.** One point for low-GWp refrigerants in cooling equipment. Current refrigerants include HCFs which have no ozone depletion potential, but have global warming potential when released into the atmosphere. Ideal refrigerants have zero ODP, zero GWP, non-toxic, non-flammable, acceptable operating pressures, and volumetric capacity appropriate to the application.
- **J11. Compartmentalization of units.** Two points are available for minimizing leakage between units by minimizing the uncontrolled pathways for indoor air pollutants between units. This includes prescriptive sealing requirements and performance testing using a blower door.
- **I7. Energy Storage.** Credit awarded to providing on site energy storage to support a portion of household energy use when solar production is not viable. This includes both thermal and electrochemical storage. This measure may be moved to the innovation list to allow for further evaluation.

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- **M2.2 Energy Star Dryer.** One point is available for an Energy Star Dryer. Dryers have become an increasing portion of residential energy use as standards for heating, cooling and domestic hot water have increased and efficiencies have improved.
 - **M2.3 Solar Dryer.** Half a point will be awarded for providing a laundry line to support solar drying. The laundry line must be a minimum of 70 feet to support a load of laundry. This measure may be moved to the innovations list.
 - **M6. Electric Vehicle Charging Stations and Infrastructure.** One point will be awarded for installation of a full circuit for a single family home. Current code requires the raceway to be installed. For multifamily projects, one point of credit is available for installing infrastructure to support the future installation of charging stations to meet Tier 2 thresholds OR two points are available for installing the full circuit to support the Tier 2 thresholds.
 - **N2.1 Within 1 mile of a Major Transit Stop.** One additional point is available for developments within 1 mile of a major transit stop with reasonable access to encourage walking or biking to the transit point. This is to further encourage alternatives to driving.
 - **N8.1 Vulnerability Assessment.** Three points are available for conducting a vulnerability assessment for a project to understand implications from climate change. While this measure may evolve over time, it is important that we would like to include it on the main checklist.
 - **N8.2. Strategies to Address Assessment Findings.** Three points will be awarded to implement strategies that address the high potential impacts from the assessment findings to improve the resiliency and durability of buildings.
 - **N9. Social Equity.** Two points are available for projects that complete a community outreach effort to engage with local community and provide a percentage of jobs for the project to local residents or provide a service to meet local needs.
 - **O11. Tobacco free buildings.** One point is awarded for properties with a no smoking policy in the building to reduce the exposure of second hand smoke.
 - **O12. IPM Management Plan.** One point is available for developing an IPM Management Plan and entering into a 5 year contract to fulfill those services as defined in the plan. A well-defined Integrated Pest Management (IPM) is a program that should be based on prevention, monitoring, and control which offers the opportunity to eliminate or drastically reduce the use of pesticides, and to minimize the toxicity of and exposure to any products which are used. IPM does this by utilizing a variety of methods and techniques, including cultural, biological and structural strategies to control a multitude of pest problems.
- **Innovation Measures.** There are several measures that Build It Green is investigating but will not be included on the main checklist at this time; they will be available through the innovations list. These measures are being developed and will evolve over time. Therefore, the innovation measure list affords this flexibility.

Interested parties are welcome to contact Build It Green to engage in these discussions to support the evaluation of the measures below. Some of the measures that are being evaluated are:

- **Decarbonization prescriptive approach by building type.** While GreenPoint Rated does capture and quantify the greenhouse gas emissions of green building with a code baseline, there is no set carbon footprint. In the long term, we will be evaluating the definition of the decarbonized/ low carbon home and look to align with research being undertaken by Air Resources Board. In the short term, we will be evaluating the opportunity to define a prescriptive approach to the fuel use for heating, cooling and domestic hot water for a low carbon home.
- **Performance metric for dampness in home.** Dampness in a home has implications on durability as well as creating an environment for mold which can adversely affect health. We are evaluating the opportunity to provide a performance metric on the dampness of a home to support more durable and healthier homes.

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- **Encapsulation of spray foam in sealed attic conditions.** Studies have been completed on occupational hazards with application of spray foam. There are initial investigations on the conditions that may impact occupants.