

ATTACHMENT G

ENERGY CHECKLIST FOR BUILDING PERMITS

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Energy and Climate Action Plan (ECAP) – Implementation Energy Checklist

Santa Barbara County’s ECAP requires applicants to complete energy checklists for residential building permits for additions or alterations other than repair and maintenance. While not as thorough as a professional home energy assessment, you can conduct your own simple home energy assessment. A self-assessment can help you pinpoint some of the low-hanging fruit when it comes to energy efficiency upgrades. Instructions for answering the questions below are provided in a corresponding how-to video. If you answer “no” to any of the questions, refer to the information provided below each question for what you can do to address the problem, along with the anticipated payback, or an estimate of how long it will take to save enough energy to pay for the cost of the upgrade.

Once you have finished your energy checklist, consider calling in a pro to complete a more thorough assessment. Your self-assessment can help the contractor better analyze your home and potential areas for saving. Learn more about professional home energy assessments through the emPower program [here](#).

According to the U.S. Department of Energy, making energy efficiency upgrades identified in a home energy assessment can save 5-30 percent on your monthly energy bill, while also ensuring the health and safety of your house.

Building Information:

- Year built? _____
- Type? _____
- Square footage? _____

Water Conservation and Heating:

1. Hot water piping in pumped, re-circulating hot water supply systems – Are your hot water pipes insulated? Yes No N/A
 - a. What you can do: Insulate the entire length of the hot water pipes to R-4 value.
 - b. Payback: Less than one year to two years.
2. Hot and cold water piping/heater connections – Are your piping connections insulated? Yes No N/A
 - a. What you can do: Insulate the first five feet to and from the heater to R-4 value. Be careful to not install insulation closer than 6 inches from any Flue (exhaust) pipe, as these pipes can get hot when the burner is running.
 - b. Payback: Less than one year to two years.
3. Water heater blankets – Do your water heater blankets have an insulation wrap of at least an R-12 value? Yes No N/A



- a. What you can do: Install an insulation blanket if you have a water heater that is more than 15 years old. If you remove a retaining strap, make sure to reinstall this strap securely; it will protect you from damages in the event of an earthquake.
- b. Payback: Less than one year to two years.
- 4. Showerheads – Do your showerheads have a maximum flow rate of 1.5 gallons per minute or less? Yes No N/A
 - a. What you can do: Replace and install your existing showerhead to save on both energy and water, especially if existing showerhead has a maximum flow rate of more than 2.0 gallons per minute.
 - Payback: Less than one year to two years.
- 5. Toilets – Are you using dual-flush toilets or waterless urinals? Yes No N/A
 - a. What you can do: If you are already thinking of replacing your old toilet, consider replacing it with a dual-flush toilet or waterless urinal.
 - b. Payback: More than five years
- 6. Hot Water Heater – How old is your hot water heater? Do you have a tankless or high-energy efficiency water heater? Yes No N/A
 - a. What you can do: The energy efficiency of hot water heaters has greatly improved over the last few years. Hot water heater usage accounts for 25% of each energy dollar spent. When comparing water heaters look for the “Energy Factor.” The higher the “Energy Factor” the more efficient the water heater. Gas water heaters have energy factors between 0.5 to around 0.7. Electric models range from 0.75 to 0.95.
 - b. Payback: More than five years

Potential rebates/incentives:

- a. Visit the Community Action Commission’s Home Energy Program for low-income residents at: <http://www.cacsb.org/low-income-assistance/home-services>
- b. Visit Southern California Gas Company at <http://www.socalgas.com/for-your-home/rebates/>
- c. Southern California Edison offers applicable rebates at: https://www.sce.com/wps/portal/home/residential/rebates-savings/rebates!/ut/p/b1/04_Sj9CPykssy0xPLMnMz0vMAfGjzOINLdwdPTyDDTzdXU0dDTydDCxDTH3MjEPNzYAKIoEKDHAARwNC-sP1o_ApCTQ0xlAQZG5k4OkV5urj72RoZGBhBFVg6W7g6uHID1QQEmhs4GkcaOAX70hobGBgBIWAx5EFuREGmZ7pigCyC5rD/dl4/d5/L2dBISEvZ0FBIS9nQSEh/
- d. PG&E offers applicable rebates at: <http://pge.com/en/myhome/saveenergymoney/rebates/index.page?>



Air Leakage:

- 1. Exterior door weatherstripping – Are your exterior doors caulked and weatherstripped? Yes No N/A
 - a. What you can do: Permanently affix weatherstripping and door sweeps or door shoes.
 - b. Payback: Less than one year to two years.
- 2. Fireplace chimneys – Do your fireplaces/chimneys have dampers, doors, or closures? Yes No N/A
 - a. What you can do: Install dampers, doors, or closures. Contact a local service provider if you are unsure of local safety codes and safety issues (e.g. fireplaces with a gas supply cannot have dampers that close completely).
 - b. Payback: Two to five years.

Potential rebates/incentives:

- a. Visit the Community Action Commission’s Home Energy Program for low-income residents at: <http://www.cacsb.org/low-income-assistance/home-services>.

Insulation:

- 1. Ceiling insulation – Do your ceilings/attics have insulation with a minimum R-30 value (8”-9”) ? Yes No N/A
 - a. What you can do: Insulate to R-30 value or greater. Insulation needs to be in continuous contact with all ceiling drywall and ceiling beams (3 sides) to get full effectiveness.
 - b. Payback: Two to five years.

Potential rebates/incentives:

- a. Visit Southern California Gas Company at <http://www.socalgas.com/for-your-home/rebates/>

Space Heating and Cooling:

- 1. Furnace duct work – Are your duct joints sealed and insulated? Yes No N/A
 - a. What you can do: Seal duct joints and add insulation wrap to R-6 value. Using tape to seal joints is only effective temporarily. Duct seal is a more effective and long-term solution. Ask for it at your local hardware store. It will be in the same area as duct insulation.
 - b. Payback: Two to five years.
- 2. Furnaces and Air Conditioners – Have you replaced your air filters? Yes No N/A
 - a. What you can do: Replace your air filters regularly. Clogged filters reduce air flow and can damage your heater. Never use more than one filter at a time for the same reason.



- b. Payback: Less than one year to two years.
- 3. HVAC/Air Conditioning – What is the age of your unit? _____ What was the date your last maintenance/service appointment? _____
 - a. What you can do: Consider regular (time period) service of HVAC unit. It can improve efficiency and energy savings up to _____.

Potential rebates/incentives:

- a. Visit Southern California Gas Company at <http://www.socalgas.com/for-your-home/rebates/>
- b. Southern California Edison offers applicable rebates at: https://www.sce.com/wps/portal/home/residential/rebates-savings/rebates!/ut/p/b1/04_Sj9CPykssy0xPLMnMz0vMAfGjzOINLdwdPTyDDTz dXU0dDTydDCxDTH3MjEPNzYAKIoEKDHAARwNC-sP1o_ApCTQ0xlAQZG5k4OkV5urj72RoZGBhBFVg6W7g6uHID1QQEmhs4Gkc aOAX7OhobGBgBIWax5EFuREGmZ7pigCyC5rD/dl4/d5/L2dBISEvZ0FBIS9nQSEh/

Lighting:

- 1. Lighting – Have you replaced your incandescent bulbs? Yes No N/A
 - a. What you can do: Replace incandescent bulbs with compact fluorescent lamps (CFL) or high-efficiency light-emitting diodes (LED). High-efficiency LED bulbs have been coming down in price dramatically. They last longer, provide nice looking light, work well with dimmers, and do not contain mercury. When shopping for light bulbs, be sure to consider High-efficiency LED.
 - b. Payback: Less than one year to two years.

Potential rebates/incentives:

- a. Visit the Community Action Commission’s Home Energy Program for low-income residents at: <http://www.cacsb.org/low-income-assistance/home-services>
- b. Southern California Edison offers applicable rebates at: https://www.sce.com/wps/portal/home/residential/rebates-savings/rebates!/ut/p/b1/04_Sj9CPykssy0xPLMnMz0vMAfGjzOINLdwdPTyDDTz dXU0dDTydDCxDTH3MjEPNzYAKIoEKDHAARwNC-sP1o_ApCTQ0xlAQZG5k4OkV5urj72RoZGBhBFVg6W7g6uHID1QQEmhs4Gkc aOAX7OhobGBgBIWax5EFuREGmZ7pigCyC5rD/dl4/d5/L2dBISEvZ0FBIS9nQSEh/

Appliances:

- 1. Appliances – Are you using energy efficient appliances? Yes No N/A
 - a. When you shop for a new appliance, look for the ENERGY STAR® label. ENERGY STAR products usually exceed minimum federal standards by a substantial amount.



- b. Payback: More than five years.

Potential rebates/incentives:

- a. Visit the Community Action Commission’s Home Energy Program for low-income residents at: <http://www.cacsb.org/low-income-assistance/home-services>
- b. Southern California Edison offers applicable rebates at: https://www.sce.com/wps/portal/home/residential/rebates-savings/rebates!/ut/p/b1/04_Sj9CPykssy0xPLMnMz0vMAfGjzOINLdwdPTYDDTz dXU0dDTydDCxDTH3MjEPNzYAKIoEKDHAARwNC-sP1o_ApCTQ0xIAQZG5k4OkV5urj72RoZGBhBFVg6W7g6uHID1QQEmhs4Gkc aOAX7OhobGBgBIWax5EFuREGmZ7pigCyC5rD/dl4/d5/L2dBISEvZ0FBIS9nQSEh/
- c. PG&E offers applicable rebates at <http://pge.com/en/myhome/saveenergymoney/rebates/index.page?>

Past, Current, and Future Improvements:

1. Since 2007, have you implemented any of the recommended improvements? Yes No N/A
2. Does your current project incorporate any of the recommended improvements? Yes No N/A
3. How likely are you to implement the recommended improvements in the future? Yes No N/A
4. What other energy-efficient upgrades have you installed in your home recently?
 - Solar Panels Date: _____
 - Energy-efficient windows No. of windows: _____ Date: _____

emPower’s Energy Coach:

1. Would you like to receive information from emPower’s Energy Coach program? Yes No

Other potential rebates/incentives/resources:

For residential homeowners:

1. The South County Energy Efficiency Partnership (SCEEP) is a collaboration between local municipalities, utilities, and the Community Environmental Council. The goal is to offer energy-efficient solutions and incentives to residential and business consumers in the area, as well as educational events to increase public awareness. For more information, visit: <http://www.southcoastenergywise.org/>
2. Santa Barbara County Energy Watch Partnership provides energy information for residents and businesses. For more information, visit: <http://www.sbcenergywatch.com/>
3. emPower Central Coast was developed to help homeowners overcome obstacles to make energy-saving improvements to their homes through incentives, financing, and expert energy



advice in the counties of Santa Barbara, Ventura, and San Luis Obispo. emPower Central Coast has also partnered with both Energy Upgrade California and the California Solar Initiative to offer more utility rebates. For more information for both homeowners and contractors, visit: <http://www.empowersbc.org>

4. Energy Upgrade California is a state program for homeowners and businesses that encourages GHG emissions reduction through a decrease in energy consumption. The program is focused on education and outreach. For more information, visit: www.energyupgradeca.org
5. The SBCAPCD's Cash for Cleaner Engines program includes off-road heavy-duty equipment replacement, off-road heavy-duty engine re-power, marine engine re-power, and agricultural stationary engine re-power. For more information, visit: <http://www.ourair.org/moyer-programs/>
6. The Building & Safety Division offers a 10-day review for photovoltaic projects.
7. PG&E offers energy efficiency incentives for complete home upgrades. For more information, visit: <http://www.pge.com/myhome/saveenergymoney/moneysaver/#/default>
8. SCE offers energy savings and incentives for your home. For more information, visit: <https://www.sce.com>
9. Southern California Gas Company offers numerous energy-efficiency resources for your home. For more information, visit: <http://www.socalgas.com/for-your-home/energy-savings/>

For non-residents and businesses (see also applicable programs above):

1. The Santa Barbara County Green Business Program (GBP) is administered by the Resource Recovery and Waste Management Division (RRWMD) and has been building momentum for over 15 years, recognizing environmental responsibility and green practices that not only benefit our surroundings but hold promise of increased efficiency and greater profit. Certification is free. For more information, visit www.greenbizsbc.org
2. SB2 is a free program that advises residential and non-residential developers on how to make their developments more energy efficient. The advice is in the form of suggestions that will benefit construction and operation of the development in a number of ways. For more information, visit: <http://longrange.sbcountyplanning.org/programs/energyelement/smartbuildSB.php>
3. PG&E offers energy efficiency rebates and incentives for businesses. For more information, visit: <http://www.pge.com/en/mybusiness/index.page>
4. SCE offers energy savings and incentives for your business. For more information, visit: <https://www.sce.com>
5. Southern California Gas Company offers rebates for businesses: <http://www.socalgas.com/for-your-business/rebates/>



Costs for Energy Upgrades, Savings, and Payback

The cost for energy upgrades and corresponding savings varies depending on the services selected, specific location/home, and participating contractor. The table below presents generalized costs/energy savings and anticipated payback for different levels of upgrades.

Upgrade Level	Cost/Energy Savings on Homeowner’s Monthly Energy Bill	Payback
<p align="center"><u>Low-Level</u></p> <p>Compact Fluorescent Lights (CFLs) or High-Efficiency (LED) light bulb replacements; low-flow fixtures; water heater blanket; insulate hot water pipes; air sealing/weatherstripping, etc.</p>	<p>- Average Cost: \$200-\$500</p> <p>- Estimated energy savings of 5-10% or more</p>	<p>Less than one year to two years</p>
<p align="center"><u>Mid-Level</u></p> <p>Duct work sealing and insulation; attic and subfloor insulation; attic and subfloor area foam air sealing; high efficiency furnace; etc.</p>	<p>- Average Cost: \$500-\$5,000</p> <p>- Estimated energy savings of 10-15%</p>	<p>Two to five years</p>
<p align="center"><u>High-Level</u></p> <p>Replace appliances; replace toilets; replace furnace/burner; replace water heater with high efficiency, tankless, or solar water heater; replace doors/windows; efficient furnace with highly insulated ducts; etc.</p>	<p>- Average Cost: \$5,000-\$15,000</p> <p>- Estimated energy savings of 15-30%</p>	<p>More than five years</p>

Sources: U.S. Department of Energy, <http://energy.gov/articles/energy-saver-101-infographic-home-energy-audits>, last accessed on March 24, 2015; City of Seattle, do-it-yourself home energy audit, last accessed on March 24, 2015 at: <http://www.seattle.gov/Documents/Departments/OSE/GreenHomeGuide-FYIenergyaudit.pdf>; The Rockefeller Foundation, United States Building Energy Efficiency Retrofits, March 2012, last accessed at <http://www.rockefellerfoundation.org/uploads/files/791d15ac-90e1-4998-8932-5379bcd654c9-building.pdf> on March 24, 2015; City of Boulder, Residential Retrofit Study in Support of Boulder’s Climate Action Plan: The Potential Role of Residential Energy Conservation Ordinances and other Policy Options, October 2008, last accessed at <https://www-static.bouldercolorado.gov/docs/retrofit-study-1-201305241423.pdf> on March 24, 2015; California Energy Commission, Lighting Research Program Case Studies, October 2005, last accessed at <http://www.energy.ca.gov/2005publications/CEC-500-2005-141/CEC-500-2005-141-A26.PDF> on March 25, 2015; The Home Depot, <http://www.ecooptions.homedepot.com/energy-efficient/appliances/>, last accessed on March 24, 2015; Halsell Builders, March 2015.



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