



Representing America's Natural Gas Utilities

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Thanksgiving Turkey Cookoff Comparison

More than 42 million households use natural gas for cooking applications. On average, cooking contributes to 3 percent of total energy usage in a home every year. Thanksgiving may be the most cooking-intensive day of the year and can have significant energy requirements. To illustrate, this analysis assumes a 15-pound turkey is prepared and cooked in the same way using three different energy sources: a standard electric oven, electric convection, and a gas oven. For the complete AGA Thanksgiving Day turkey recipe, see the next page.

Findings

- A gas oven will cost on average \$0.49 to cook a turkey or a few cents less than an electric convection oven. However, a traditional electric oven will consume more energy and cost \$0.95 for the same amount of cooking time.
- Compared to the energy usage of the gas oven, cooking multiple dishes on a cooktop will consume almost as much energy as cooking the turkey. Cooking six dishes on a gas stove for 30 minutes each will cost \$0.31. On an electric stovetop, the same meal would cost \$0.40
- While most households don't cook a full Thanksgiving meal every day, the amount of energy consumed on the holiday isn't far from what might be used over a typical week. Customers using a natural gas appliance for cooking can save between \$5.50 and \$28.50 a year.
- No matter what appliance is used, energy conservation can help lower a utility bill. Leave the oven door closed while in use, use appropriately sized pans for burner tips, boil only the amount of water you need, and allow leftovers to cool up to four hours after cooking before storing in the fridge.

Oven	Average Cook Temperature	Total Cook Time	Energy Used/hour	Energy Cost per Unit	Total Cost
Natural Gas	350	180 min	0.112 therm +0.35 kWh	\$1.038/therm +\$0.132/kW	\$ 0.49
Standard Electric	350	180 min	2.4 kWh	\$0.132/kW	\$ 0.95
Convection Electric	325	165 min	1.4 kWh	\$0.132/kW	\$ 0.51

Stovetop	Burner Usage @ Medium	Total Cook Time*	Energy Used/hour	Cost Per Unit	Total Cost
Natural Gas	10,000 BTU	180 min	0.1 therms	\$1.038/therm	\$ 0.31
Electric	1000 Watts	180 min	1 kWh	\$0.132/kW	\$ 0.40

*Total cook time is the sum of time spent on each burner. 6 dishes for 30 min each equals 180 min total time

SOURCE: <https://blog.constellation.com/2016/05/20/toaster-oven-vs-microwave-energy-efficiency/>;
Energy Conservation Program for Consumer Products: Representative Average Unit Costs of Energy 2019

AGA Thanksgiving Day Turkey Recipe

Ingredients

1 (14 to 16 pound) frozen young turkey

For the Brine:

1 cup kosher salt

1/2 cup light brown sugar

1-gallon vegetable stock

1 tablespoon thyme

1 tablespoon black peppercorns

1/2 apple cider vinegar

1-gallon cold water

For the Rub:

1 tablespoon butter

1/2 tablespoon olive oil

2 tablespoon mustard (pick your favorite!)

4 sprigs rosemary

1 tablespoon thyme

1 tablespoon sage

1/2 tablespoon salt

1/2 tablespoon pepper

Directions:

1. 2-3 days before roasting, begin thawing the turkey in the refrigerator.
2. The night before the feast, combine the brine ingredients in a stockpot and bring to a boil. Stir everything occasionally to dissolve the solids. Then remove from the heat, cool to room temperature, and refrigerate.
3. Combine the turkey, brine, and any additional water necessary to submerge the entire turkey. Cover and refrigerate for 8 to 16 hours. Turn the bird over once if possible, while it's in the brine.
4. Preheat the oven to 450 degrees F. Remove the bird from the brine and rinse out the inside and out with cold water. Discard the brine.
5. Place the turkey on a roasting rack inside a roasting pan or sheet pan.
6. Mix the rub and cover the bird with it.
7. Ideally, do not put stuffing ingredients inside the bird. This will slow down the cooking time by 30 min or more and will also result in overcooked breast meat.
8. Roast the turkey on the lowest level of the oven with a sheet of foil lightly placed on top. This will keep the bird from overcooking the breast meat before the whole bird has reached the ideal temperature. Leave the oven at 450 min for just 30 minutes. Then turn the temperature down to 350 degrees F. A bird of this size should take an additional time of 2 ½ - 3 hours to be fully cooked. Don't hesitate to check after the 2 hour mark. Remove from the oven when the temperature of the thickest part of the breast meat is over 161 degrees F.
9. Let the turkey rest, wrapped in foil for 15 minutes before carving. Enjoy!