



SAVE TODAY. SAVE TOMORROW.
SAVE FOR GOOD.

ENERGY STAR® Commercial Food Service Virtual Workshop 2022



May 10-12, 2022
[Workshop Webpage](#)



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Workshop Sessions

- Day 1 ENERGY STAR and Why it Matters: Benefits of ENERGY STAR Certified Equipment
 - Tanja Crk (EPA)
- Day 2 Advanced Cooking: Perspectives from Chefs, Operators, and Kitchen Designers
 - Chef Christopher Galarza (Forward Dining Solutions)
 - Tarah Schroeder (RICCA)
 - Anthony Coschignano (Swarthmore College)
 - Kahlil Wells (Stanford University)
- Day 3 Decarbonization in the Commercial Kitchen: Utility Opportunities and Manufacturer Solutions
 - Scott Heim (Middleby Ventless Cooking Solutions)
 - Nikki Dube (Con Edison)
 - Andre Saldivar (Southern California Edison)



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ENERGY STAR and Why it Matters

Benefits of ENERGY STAR Certified Equipment

ENERGY STAR® Commercial Food Service Virtual Workshop 2022

Tanja Crk

May 10, 2022





ENERGY STAR is voluntary network of government, business, utility, and community partners

The Goal: to save money and protect our climate through superior energy efficiency

energystar.gov/partnersearch



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What is ENERGY STAR?

Now in our 20th
year partnering
with the
**commercial food
service** industry!



- Influential and trusted symbol of **energy efficiency**
- Available across **75+ product categories**
- Products are independently certified to meet strict energy-efficiency guidelines set by the **U.S. EPA**
- **Utilities** offer **rebates** on ENERGY STAR certified equipment
- **Saves** end-users **energy**, **water**, and **money**
- Helps protect the **climate**



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ENERGY STAR and the Environment

- ENERGY STAR is an important tool in fighting **climate change**, improving **air quality**, and protecting **public health**.
- In 2019, ENERGY STAR and its partners helped Americans save nearly 500 billion kilowatt-hours of electricity and avoid \$39 billion in energy costs. These savings resulted in associated emission reductions of nearly 390 million metric tons of GHGs, roughly equivalent to **5% of U.S. total GHG emissions**.
- In 2019, the avoided air pollution (i.e., sulfur dioxide, nitrogen oxides, fine particulate matter) due to ENERGY STAR was responsible for an estimated \$7-17 billion in public health benefits.



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Benefits to joining ENERGY STAR

MORE THAN
90%
RECOGNIZE THE
ENERGY STAR® LABEL

Source: CEE's 2019 Household Survey
<https://www.energystar.gov/awareness>

- Leverage the ENERGY STAR label in promoting certified efficient products
- Access customer support teams at EPA
- Utilize co-brandable materials
- Participate in promotional events
- Get listed on publicly-available ENERGY STAR partner search tools (e.g., CFS dealer/distributor finder)
- Apply for the ENERGY STAR Partner of the Year Award for effectively leveraging the ENERGY STAR name and mark to promote CFS sales



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ENERGY STAR Partnership Types of Relevance to the CFS Industry



- Brand owners
- Retailers including CFS dealers and distributor
- Energy Efficiency Program Sponsor
- Building/plant owners who commit to improving the energy and environmental performance of their facilities by leveraging ENERGY STAR Portfolio Manager

For more information on joining as an ENERGY STAR partner visit this webpage
https://www.energystar.gov/partner_resources/join-energy-star



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ENERGY STAR CFS

Products & Marketing





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CFS products in the ENERGY STAR portfolio

- Refrigerators and Freezers
- Hot Food Holding Cabinets
- Dishwashers
- Griddles
- Fryers
- Steam Cookers
- Ice Makers
- Ovens
- Coffee Brewers
- *Electric Cooktops (including induction) – under development*

energystar.gov/cfs



Subscribe to the CFS distribution list by sending an email to CFS@energystar.gov! 10

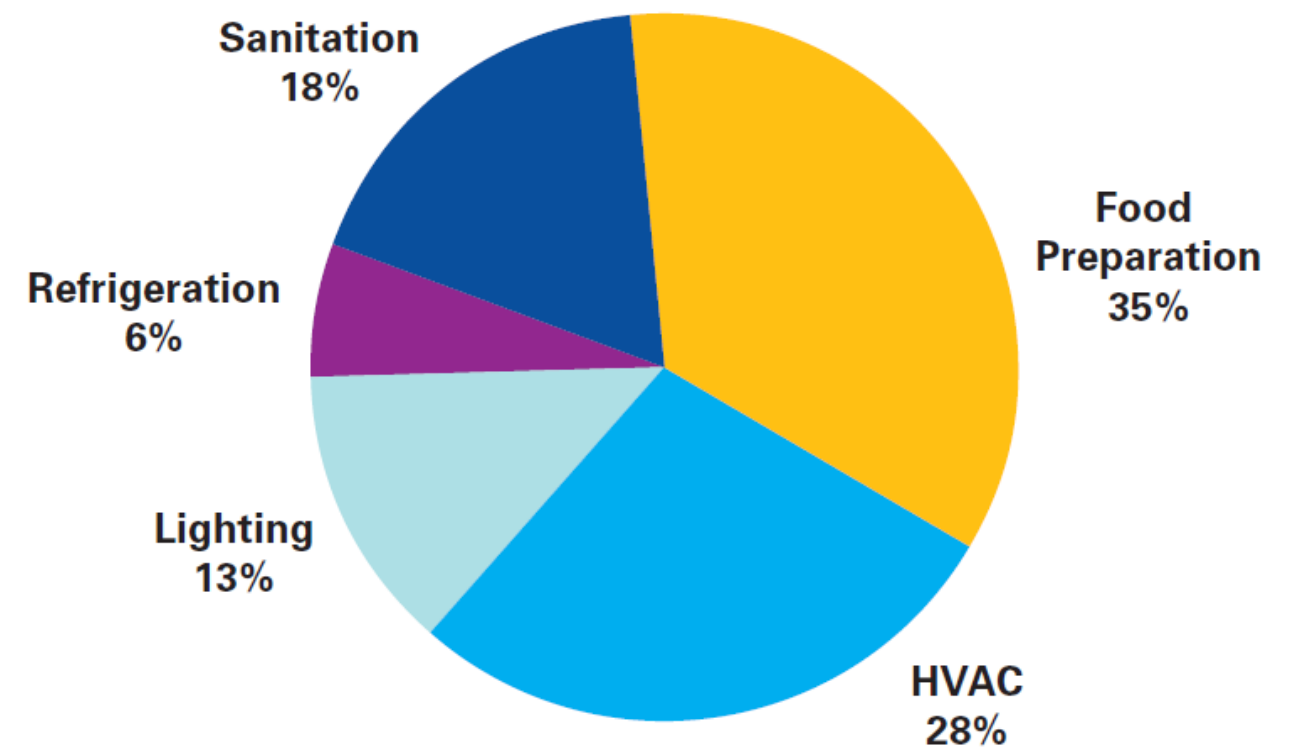


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Energy Consumption in Commercial Kitchens

- **Commercial kitchens** are energy intensive
 - Use **2-3 times more energy per square foot** than other commercial buildings (e.g., office, retail stores).
- A single piece of equipment is energy intensive
 - Typical electric deep fat **fryer** can consume more than 18,000 kWh annually, while the **average U.S. household** electricity use is approx. 12,000 kWh annually.

Example of the Average Energy Consumption in a Full-Service Restaurant
(British Thermal Units [Btu])





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ENERGY STAR Certified Equipment in Restaurants

Energy Star-rated kitchen equipment popular Nearly half of all restaurants use EPA Energy Star-rated refrigerators. Independently owned restaurants are slightly more likely than chain/franchisee operations to use EPA Energy Star-rated kitchen equipment.*

Percent of restaurant operators using Energy Star-rated appliances



Refrigerators



Freezers



Icemakers



Dishwashers



Fryers

Source: [National Restaurant Association The State of Restaurant Sustainability 2018 Edition](#)



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Energy Savings in Commercial Kitchens

- Outfitting a commercial kitchen with a suite of ENERGY STAR certified equipment could save an **operator** 340 million BTU/year, or more than \$5,300/year, on energy bills.
- That means, more energy goes into the food and less energy is wasted!
- Rebates are the additional incentive to purchase ENERGY STAR certified equipment!





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ENERGY STAR CFS Incentives from ENERGY STAR Utility Sector Partners

- Electric, gas, and dual-fuel utilities offer incentives
 - 269 utilities offer incentives for one or more CFS product categories (as of Q3 2021)
 - Over 9 million commercial customers (52% of total U.S. commercial customers) had access to CFS incentives
- Incentives vary based on product category.

Product	Average Incentive Amount
Dish	\$719
Fryer	\$421
Griddle	\$373
HFHC	\$327
ACIM	\$190
Oven	\$863
CRE	\$132
Steamer	\$835



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Latest CFS Product Specification Revisions

Product	Version	Effective Date
Dishwasher	3.0	7/27/2021
Refrigerators & Freezers	5.0	12/22/2022
Ovens	3.0	1/12/2023

Upcoming CFS Product Specification Development

- ❖ Commercial electric cooktops, Version 1.0

Upcoming CFS Product Scoping Efforts

- ❖ Demand control kitchen ventilation
- ❖ Pressure fryers, tilt skillets, rotisserie ovens
- ❖ Electric hand dryers
- ❖ Refrigerated preparation & buffet tables ([data assembly](#))

ENERGY STAR Product Finder
now clearly identifies for
consumers **low-global
warming potential (low-GWP)**
refrigerants for applicable
products



**2022 ENERGY STAR Emerging
Tech Award** recognizes
innovative technologies:
**advanced adaptive
compressor systems** in
commercial refrigeration
equipment. Questions?
emergingtech@energystar.gov





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CFS Tools

- CFS equipment calculator – updated in 2021
- Dealer & Distributor Toolkit – updated in 2021
- Sell sheets for all products – new release in Q2 2022
- Ask the Experts articles “For Business”
 - [Cut Utility Costs in Commercial Kitchens](#)
 - [Reducing Refrigeration Costs](#)
 - [Selecting the Right-Sized Commercial Oven](#)



Selling ENERGY STAR CFS Equipment

Step 1: Identify the ENERGY STAR Products Available

There are nine ENERGY STAR certified CFS product categories. Click on the product categories below to view the ENERGY STAR sell sheet. The sell sheets contain facts on the specification and the energy / water savings associated with each product, allowing you to promote ENERGY STAR equipment.



The ENERGY STAR Product Finder will help you develop a list of certified products for your customers' specific needs. Follow these steps to determine what ENERGY STAR products are available within each product category:

How to Use the ENERGY STAR Product Finder:

1. Visit the [ENERGY STAR Product Finder](#)
2. Select either Commercial Food Service Equipment or one of the nine CFS product categories.
3. Review the results and if needed, filter your results further by "Type," "Brand Name," or other key product features. *Optional: Compare up to 4 different products.*
4. Make informed recommendations about ENERGY STAR certified products to your customer.

DID YOU KNOW

The **ENERGY STAR Product Finder** is a searchable online database of ENERGY STAR certified products. The Product Finder is updated daily.

Step 2: Determine the Customer's Return on Investment (ROI)

Provide your customer with an estimated operating cost and the potential energy and water savings from certified equipment.

1. Visit the [ENERGY STAR CFS Equipment Calculator](#).
2. On the first tab titled, "INPUTS," enter where the equipment will be used (select the U.S. average or a specific state).
3. Then, enter the quantity of kitchen equipment that your customer is planning to purchase (all nine ENERGY STAR product categories are included). *Optional: Fill in the product information (i.e. racks washed per day, fuel type, operating days per year, etc.) or use the default data included in the Calculator.*
4. Click the link at the bottom of the tab and you will be taken to the "RESULTS" tab.
5. Review the results and provide your customer with the benefits of purchasing ENERGY STAR certified equipment, including lifecycle cost, return on investment, and quality.



CFS Equipment Calculator

Estimate savings from purchasing ENERGY STAR certified CFS equipment.

Calculate Savings



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Product Finder

ENERGY STAR products are
certified
to save energy.

Explore models

How to locate certified equipment? ENERGY STAR Product Finder

Search for ENERGY STAR certified products, compare product features, and export data

Find and Compare Products

Languages: English | Français

Access to ENERGY STAR
API, Data Set or Excel File



Find product models that have
earned the ENERGY STAR and
compare features, savings and
more to optimize your purchase.

- 1 Select a product category of
interest to you.
- 2 Get details on specific qualifying
models.
- 3 Make informed purchasing
decisions.

ENERGY STAR Certified

Commercial Refrigerators and Freezers

Visit the [Commercial Refrigerators and Freezers](#) page for usage tips and buying guidelines.

CHANGE
product category

1032 Records Found

Filter Your Results

filter by keyword

Type

- ☐ Vertical Solid Door Refrigerator (442)
- ☐ Vertical Transparent Door Refrigerator (351)
- ☐ Vertical Solid Door Freezer (182)
- ☐ Vertical Transparent Door Freezer (43)
- ☐ Horizontal Transparent Door

Sort by:

Energy Use (kWh/day) ↑↓

Share Your Results

IDW - TEQ-77

Compare

Type: Horizontal Transparent Door Refrigerator Configuration (Vertical/Chest): Chest
Volume (cu. ft.): 2.3 Number of Doors: 1
Energy Use (kWh/day): 0.26 Refrigerant Type: R-600a



IDW - RCM-VISID

Compare

Type: Horizontal Transparent Door Refrigerator Configuration (Vertical/Chest): Chest
Volume (cu. ft.): 2.19 Number of Doors: 1
Energy Use (kWh/day): 0.29 Refrigerant Type: R-600a



ENERGY STAR Certified Commercial Refrigerators a...

Public

Edit

...

Manage Collaborators

ENERGY STAR Certified Commercial Refrigerat...

Certified models meet all ENERGY STAR requirements as listed in the
Version 4.0 ENERGY STAR Program Requirements for Commercial

Find in this Dataset
More Views Filter Visualize Export Discuss Embed About

ENER...	ENERGY STAR Partner	Brand Name	Model Name	Model Number	Additional
2,333,372	Allied Manufacturing, Inc. DBA Valp...	Valpro	Commercial freezer	VP1F-HC	
2,333,423	Allied Manufacturing, Inc. DBA Valp...	Valpro	Commercial refrigerator	VP1R-23HC	
2,333,370	Allied Manufacturing, Inc. DBA Valp...	Valpro	Commercial refrigerator	VP1R-HC	
2,333,373	Allied Manufacturing, Inc. DBA Valp...	Valpro	Commercial freezer	VP2F-HC	
2,333,424	Allied Manufacturing, Inc. DBA Valp...	Valpro	Commercial refrigerator	VP2R-48HC	
2,333,371	Allied Manufacturing, Inc. DBA Valp...	Valpro	Commercial refrigerator	VP2R-HC	
2,333,425	Allied Manufacturing, Inc. DBA Valp...	Valpro	Commercial refrigerator	VPUCR27	
2,333,426	Allied Manufacturing, Inc. DBA Valp...	Valpro	Commercial refrigerator	VPUCR48	
2,333,427	Allied Manufacturing, Inc. DBA Valp...	Valpro	Commercial refrigerator	VPUCR60	
2,340,478	Allied Trading Inc.	Padela	PDB-1R-HC	PDB-1R-HC	
2,340,477	Allied Trading Inc.	Padela	PDB-2F-HC	PDB-2F-HC	
2,340,398	Allied Trading Inc.	Padela	PDB-2R-HC	PDB-2R-HC	
2,340,643	Allied Trading Inc.	Padela	PDB-3R-HC	PDB-3R-HC	



www.energystar.gov/productfinder



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Rebate Finder

Our partners sponsor rebates
on certified products.



How to locate certified equipment rebates? ENERGY STAR Rebate Finder

- Find rebates and special offers near you on ENERGY STAR certified products!
- Search by zip code, and filter for the products you are interested in.
- Connects you to rebate amount, type (mail-in, online, etc.) and utility website.



Find rebates and special offers near you on ENERGY STAR certified products. Products that earn the ENERGY STAR label meet strict energy-efficiency specifications set by the U.S. EPA helping you save energy and money while protecting the environment.



Enter your zip code to begin.

FIND REBATES

www.energystar.gov/rebatefinder





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CFS Dealer / Distributor Finder

Locate CFS dealers/distributors in
your area that sell ENERGY STAR
certified products.



How to Locate Dealers? ENERGY STAR Dealer/Distributor Finder

Search by zip code for dealers and distributors who sell ENERGY STAR certified CFS equipment. The search yields a map and storefront address, contact information, and website

CFS Dealer/Distributor Finder



Enter your zip code in the
box below to locate dealers
and distributors in your area.

- 1 Enter your zip code to see a list of nearest dealers and distributors.
- 2 Narrow the results to the product categories of interest to you.
- 3 Contact dealers and distributors via provided contact information.

Enter your zip code to begin

FIND DEALERS & DISTRIBUTORS OF
ENERGY STAR CERTIFIED PRODUCTS

Please contact cfs@energystar.gov with any questions or concerns.



<http://energystar.gov/cfs/dealer-finder>

6 Partners found (within 100 miles)



The links below will take you to Web sites external to the energystar.gov domain. EXIT

Filter Your Results



Distribution locations for **All Things Restaurant**



All Things Restaurant
12609 OH-113
Wakeman, OH

Contact Information
Brad Crow : brad@atrinc.us

CFS Dealers & Distributors can [join ENERGY STAR](#) as 'retail' partners by following these simple steps. Review, complete, and submit a [Partnership Agreement](#) and [Retailer Participation Form](#) to join@energystar.gov.



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Restaurant, Café, and Commercial Kitchens Guides

- Co-Brandable, best-practices guide designed to help operators identify ways to save energy and water and boost their bottom line while protecting the environment!
- Includes:
 - Cost savings per product type
 - Incentive ranges available from partners across the U.S.
 - Benchmarking
 - Water conservation tips
 - Much more!

EPA developed this guide in partnership with PG&E's Food Service Technology Center and the National Restaurant Association's Conserve Program in 2015 with assistance from CA's four Investor-Owned Utilities



https://www.energystar.gov/sites/default/files/asset/document/CR%20ES%20Restaurant%20Guide%202015%20v8_0.pdf



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ENERGY STAR CFS

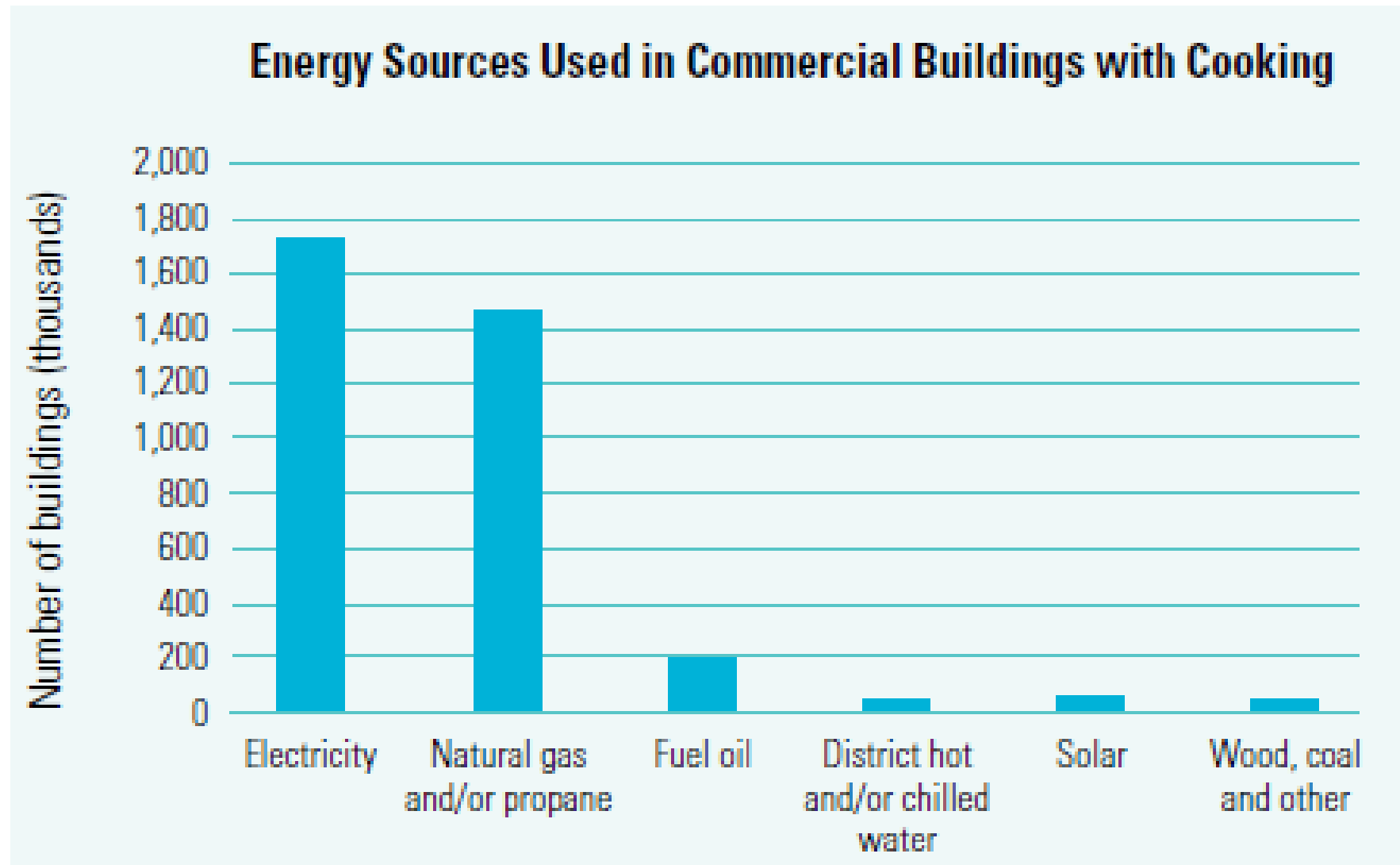
Decarbonization





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A near even split among top energy sources used in commercial cooking





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All-Electric Commercial Kitchen

FIGURE 5.30: AN ALL-ELECTRIC COOKLINE REQUIRES A SMALLER FOOTPRINT THAN A TRADITIONAL COOKLINE FOR EQUAL OR IMPROVED THROUGHPUT



FIGURE 5.19: A HIGH TECH ALL-ELECTRIC KITCHEN LINEUP WITH COMBI OVEN, INDUCTION COOKTOP, FLEXIBLE BRAISING PAN, BLAST CHILLER, HOT AIR FRYER, AND HEAT RECOVERY DISHMACHINE



Source: Picture courtesy of the Frontier Energy Induction Technology Center | fishnick.com/ITC/



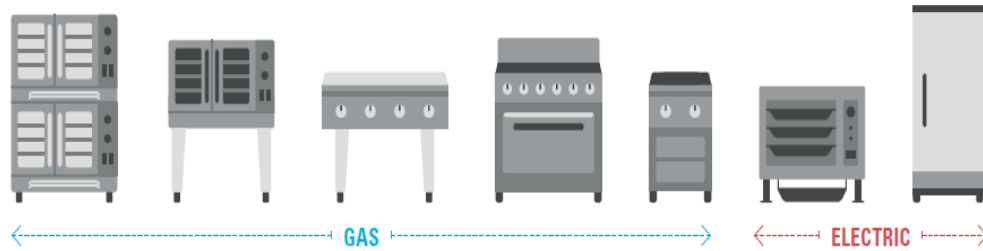
Source: Cooking with induction at Pineapple and Pearls in Washington, DC, a Michelin star restaurant. (photo: Rick Theis)



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Comparing cooklines

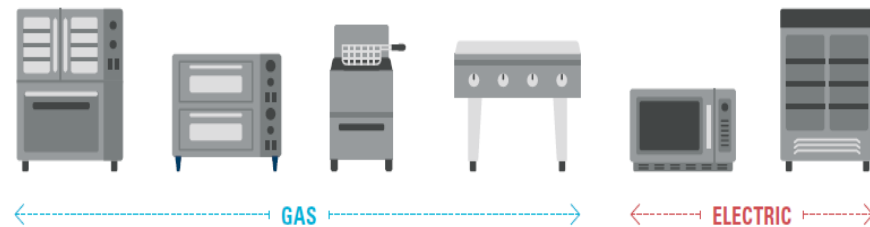
BASE EFFICIENCY COOKLINE



CO₂ = 37.3 metric tons / year
Fuel Cost = \$11,812 / year

Highest cost & highest CO₂ emissions

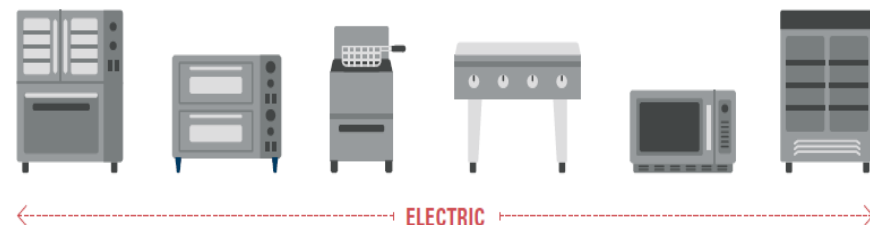
HYBRID KITCHEN COOKLINE



CO₂ = 13 metric tons / year
Fuel Cost = \$4,079 / year
Savings vs Base = 24.3 tons and \$7,733

Lowest cost & moderate CO₂ emissions

ALL-ELECTRIC KITCHEN COOKLINE



CO₂ = 5.2 metric tons / year
Fuel Cost = \$9,356 / year
Savings vs Base = 32.1 tons and \$2,456

Moderate cost & lowest CO₂ emissions

Source: Decarbonizing the Commercial Kitchen with Energy Efficient Equipment, FISHNICK, April 30th, 2020.



Source: William J. Worthen, The Building Decarbonization Practice Guide, Volume 5
<https://worthenfoundation.org/get-the-guide-bdpg>



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Restaurants expected to be more energy efficient by 2030

“
Restaurant physical spaces will be smaller, requiring less square footage due to the increase in delivery and takeout.”
— Delphi panelist

25
MOST LIKELY DEVELOPMENTS BY 2030

18. More restaurants will be designed to reduce use of energy and water and minimize waste.

13. Equipment used in restaurants will be more energy-efficient.

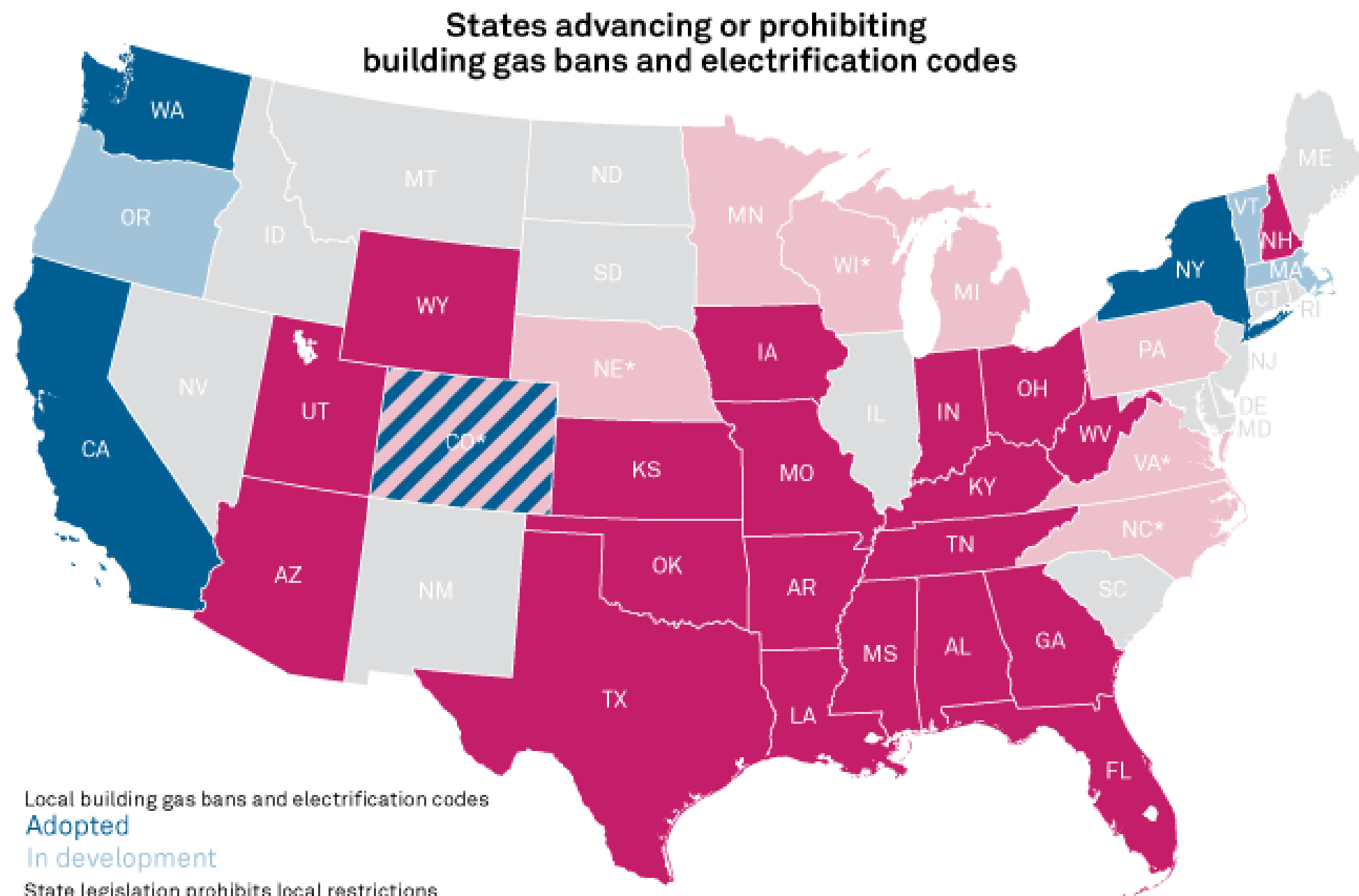
✓ State and local governments will increase restaurant industry regulation...



Source: NRA's Restaurant Industry 2030: Actionable insights for the future
<https://restaurant.org/nra/media/restaurant-2030/restaurant2030.pdf>



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Source:
<https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/gas-ban-monitor-west-coast-pushes-new-boundaries-pro-gas-state-bills-stall-69969602>

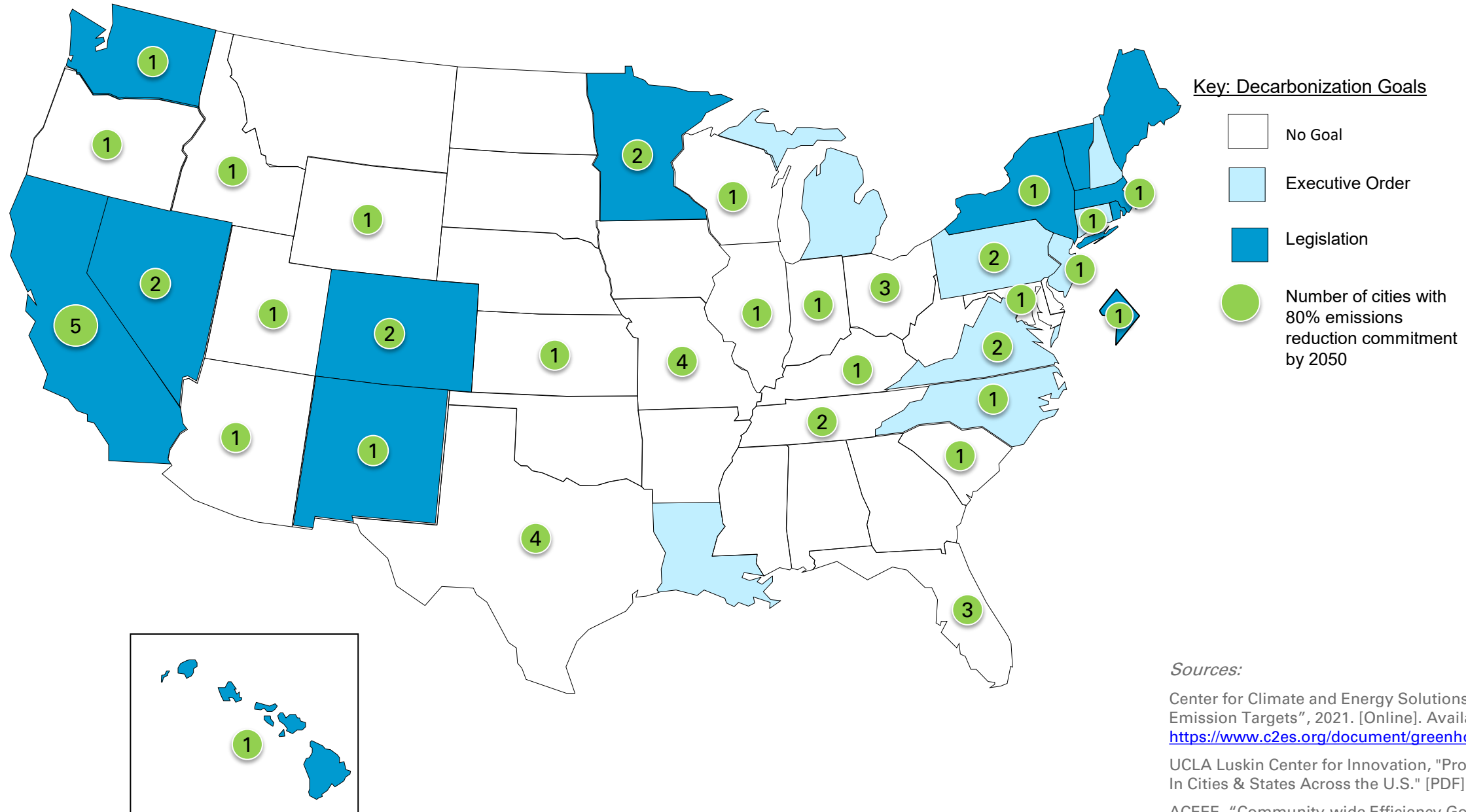


As of April 21, 2022.
Map credit: Ciaralou Agpalo Palicpic
Source: S&P Global Market Intelligence



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States and cities commit to reduce carbon emissions by at least 80% by 2050



Sources:

Center for Climate and Energy Solutions, "U.S. State Greenhouse Gas Emission Targets", 2021. [Online]. Available at: <https://www.c2es.org/document/greenhouse-gas-emissions-targets/>

UCLA Luskin Center for Innovation, "Progress Toward 100% Clean Energy: In Cities & States Across the U.S." [PDF] November 2019

ACEEE, "Community-wide Efficiency Goals", <https://database.aceee.org/city/community-wide-energy-efficiency-goals>





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Utility Partners with Corporate Commitments to Reduce Carbon Emissions by $\geq 80\%$ by 2050



Southern Company

(Including all 7 subsidiaries)



Your Touchstone Energy® Cooperative



(Including all 8 subsidiaries)

EVERSOURCE

(Including all 4 subsidiaries)



(Including both subsidiaries)



(Including all 6 subsidiaries)



(Including all 10 subsidiaries)



Estes Park • Fort Collins • Longmont • Loveland

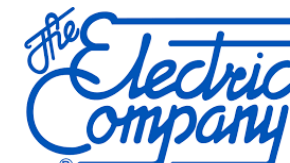
(Including all 4 subsidiaries)



(Including both subsidiaries)



An IDACORP Company



El Paso Electric



(Including all 10 subsidiaries)



(Including all 8 subsidiaries)



(Including both subsidiaries)



(Including both subsidiaries)



Count on Us



(Including all 3 subsidiaries)



Madison Gas and Electric



(Including all 7 subsidiaries)



(Including all 9 subsidiaries)



(Including all 3 subsidiaries)



(Including all 3 subsidiaries)



(Including all 5 subsidiaries)



A FORTIS COMPANY



(Including both subsidiaries)



Hawaiian Electric



TENNESSEE VALLEY AUTHORITY



The Reliable One



Energy for What's Ahead®

**Not inclusive of all ENERGY STAR utility partners with 80x50 goals*



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Commercial Electric Cooktops *incl. Induction*

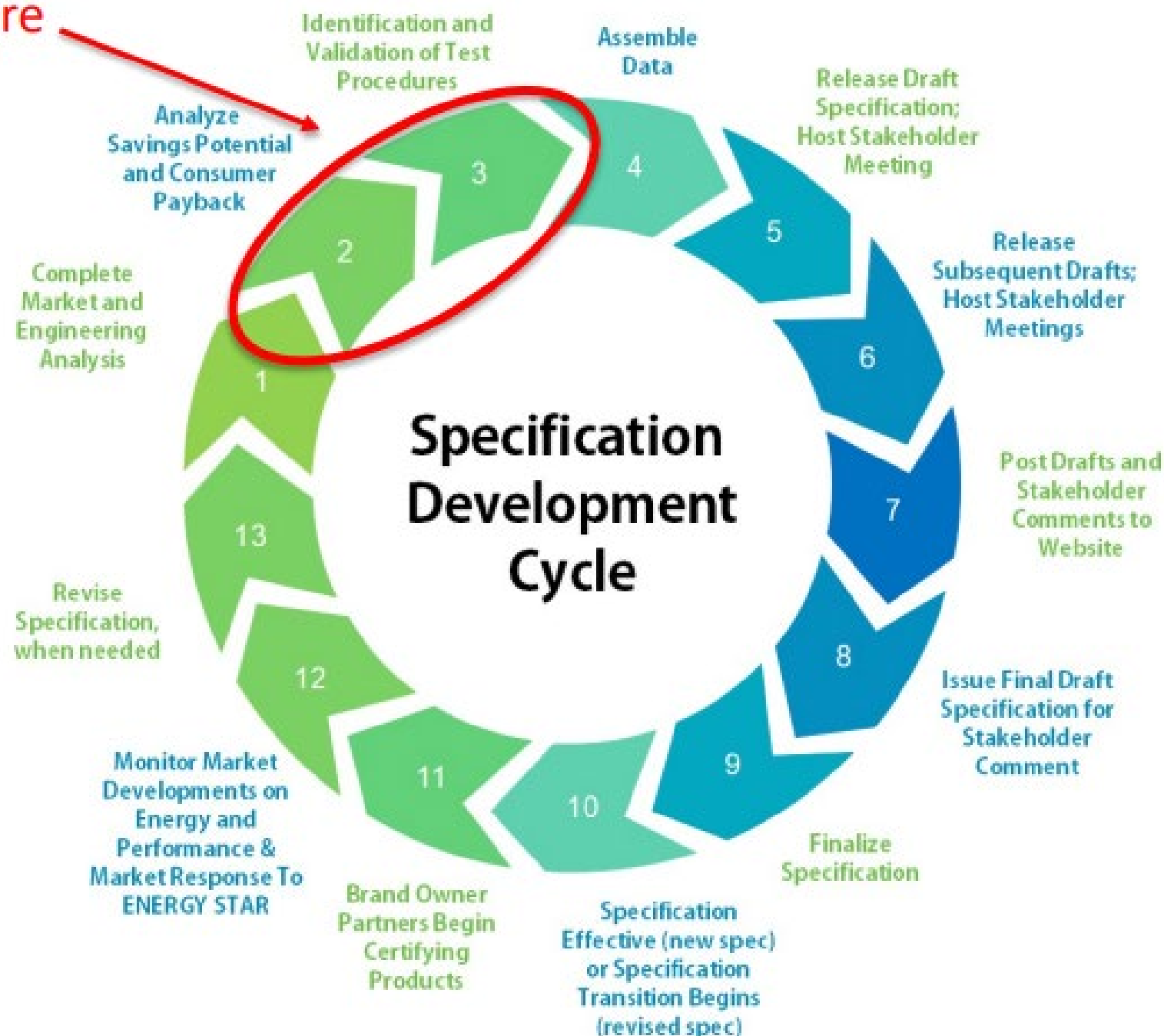
[ENERGY STAR Commercial Electric Cooktop Version 1.0 Discussion Guide.pdf](#) (PDF, 250 KB)

ENERGY STAR Commercial Electric Cooktop Version 1.0 Draft 1 Product Specification (est. Q3 2022)

EPA welcomes partner and stakeholder input on this specification!

 [Product development webpage](#)

We are here





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Energy Savings for Electric Resistance and Induction Cooktops

Approximate Efficiency Performance for Cooktops

Based on Boil Test:

- Natural gas: 25-40%
- Resistive electric: 65-75%
- Induction electric: 80-90%

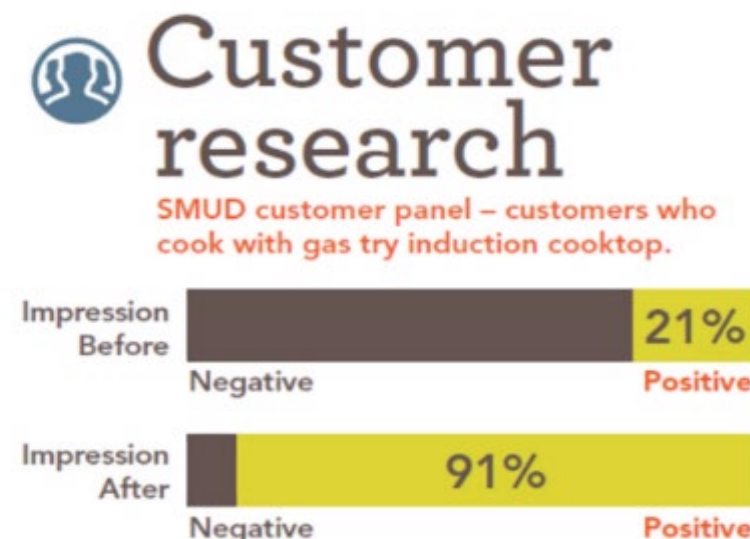
Frontier Energy. Electric Plug Load Savings Potential of Commercial Food Service Equipment Report Draft, April 2020.

Other Benefits of Induction

- Faster cook times (higher throughput)
- Easier to control (more precision)
- Indoor air quality from reduced combustion
- Improved working conditions (reduced heat)
- Chefs who use it approve it!



Hands-On Changes Hearts-and-Minds!



Young, Richard. Frontier Energy Webinar, August 2019.

“Once you get the hang of them, they're far easier than cooking on gas or electric.”

— Celebrity Chef James Ramsden

Source: <https://eurokera.com/blog/professional-chefs-love-induction-cooking-and-you-should-too/>



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Conclusions

- Without ENERGY STAR, there would be less incentive for innovation in energy efficiency
- CFS **cooking** equipment is unregulated from an energy perspective; without ENERGY STAR, there is no minimum efficiency threshold (Federal or State, in most cases)
- Many (if not most) operators in the U.S. prefer gas-fueled equipment due to cost, familiarity, experience, simplicity, etc. and the demand for gas options may persist indefinitely
- However, the market is slowly becoming more open to electric equipment alternatives and manufacturers are meeting the demand



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Questions?

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Product Developer
CFS Industry Specialist



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Thank You!

