

Electric Fireplaces



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History of Fireplaces (Early Human Existence-Middle Ages)

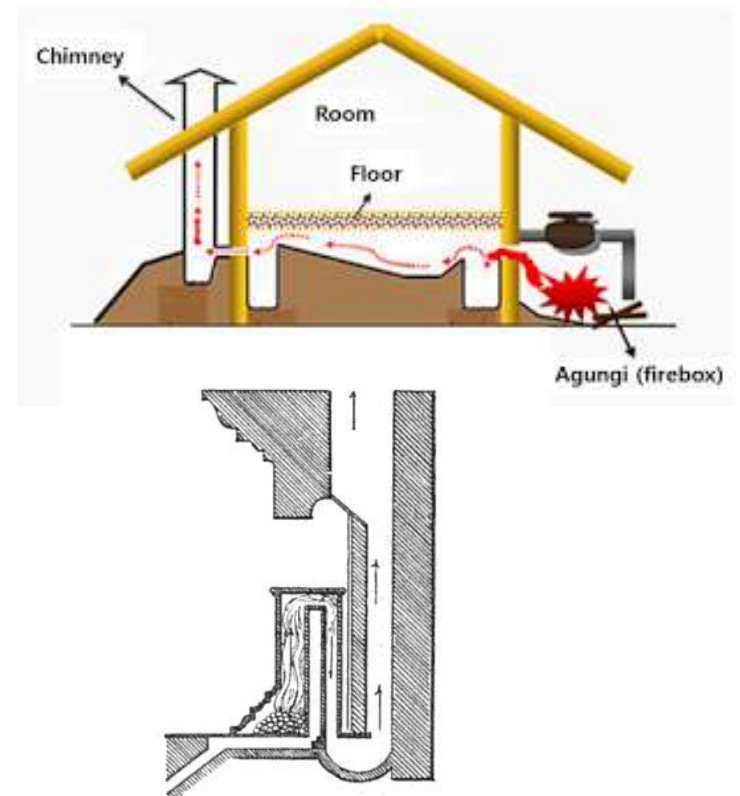
- Fires have been used for heating as early as 1.5 million years ago.
- Had a couple disadvantages:
 - Negative health effects from smoke.
 - Irritation in the lungs caused by smoke.
- In the middle ages smoke canopies were invented to help capture the smoke.



(Stanford University, 2011)

History of Fireplaces (Middle Ages-1800's)

- Chimneys were invented by Korean Ondols 7,000 years ago.
 - This helped address the issue of indoor air quality from fires.
- Flash forward to the 1700's when Ben Franklin invented a convection chamber.
 - Franklins invention drastically increased the heating efficiency of the fireplaces.
- After the 1700's advancements in fireplaces were kept to aesthetics.



(Pinterest, 2019)
(Wikipedia, 2019)

History of Fireplaces (1850's- Present)

- In the mid- to late 1800's gas fireplaces started being commercially marketed and sold.
- Along with the increased implementation of gas fireplaces the 1950's birthed popularity of fireplace ambiance.
 - This accredited to Franklin D. Roosevelt and his "Fireside Chats".
- Following the clean air act of 1963 gas fireplaces gained popularity.



(eBay, 2019)

(White House History, 2019)

History of Fireplaces (1850's- Present) Continued

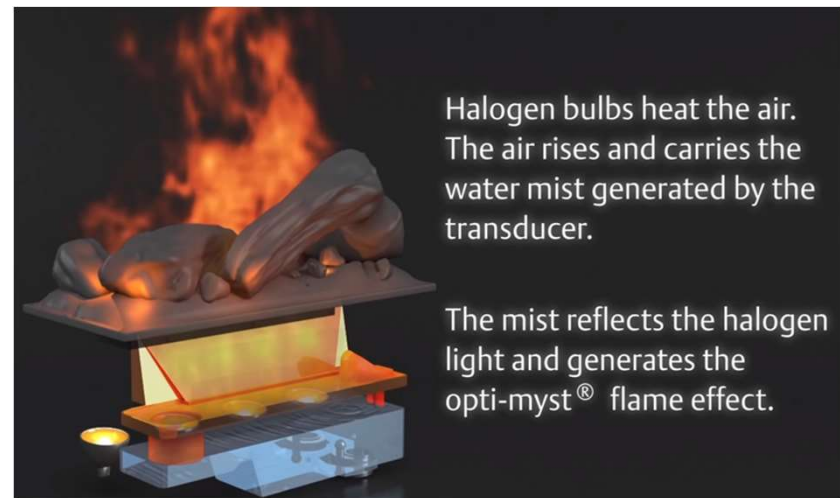
- First electric fireplace in 1995 with the ambiance of a wood or gas flame without the use of combustion.
- In 2008, Dimplex launched the Opti-myst effect which simulates both flames and smoke.
- In 2013, Dimplex launched the Opti-V effect.



(Dimplex, 2006)
(Redwood Energy, 2018)

How do Electric Fireplaces Simulate Fire?

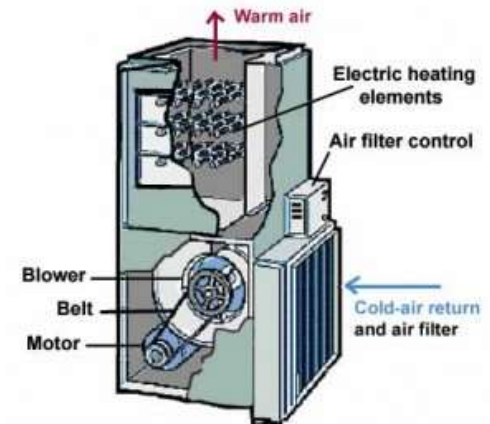
- Earlier electric fireplaces use a rotating silver tube that reflects dancing firelight onto a screen.
- Since 2008, when Dimplex released their newer opti-myst effect. Electric fireplaces have started to use water vapor for smoke-like steam that is lit with LEDs.



(Youtube, 2014)

How Electric Fireplaces Produce Heat

- 99% of electric fireplaces have an integrated heater.
 - The heater works similar to hair dryer.
- Most fireplaces use a standard outlet with a 15 amp breaker.
 - Max power of 1.5kW
 - Use 5000 BTUs/hour
- Can heat a big living room, small apartment or tiny house

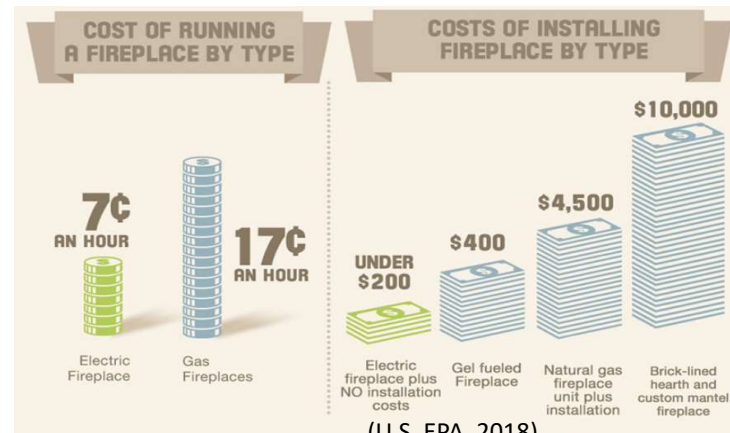


(Hometips, 2019)

(Google Images, 2019)

Pros to Electric Fireplaces

- Electric fireplaces are safer and cleaner than wood or gas fireplaces.
 - Less GHG emissions
 - Better resulting air quality
- Easier to install compared to gas and wood fireplaces.
 - Cheaper
 - Less maintenance
- Can be moved into different rooms depending on the size of the fireplace.

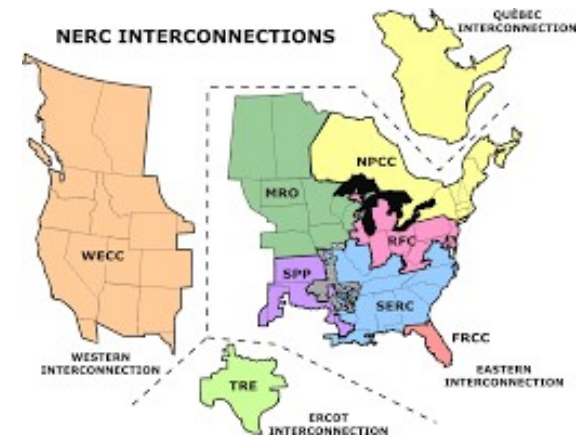


(U.S. EPA, 2018)

(Electric Fireplaces Direct, 2019)

Cons to Electric Fireplaces

- Dependence on grid
 - Doesn't work during power outages
- Increases electricity consumption
- Electric fireplace is only as clean as the grid.
- Can overload outlets



(NERC, 2016)
(Carbon Brief, 2019)

Best Luxury Electric Fireplaces

Dimplex IgniteXL	Modern Flames Spectrum	Modern Flames CLX Series	Amantii Panorama Series	Ambella Home Collection
				
Size: 50.3" W x 15.6" H x 5.9" D	Size: 48.5" W x 18.25" H x 8" D	Size: 144" W x 25.5" H x 5.3" D	Size: 72.5" W x 26.7" H x 14.25" D	Size: 57" W x 52.5" H D x 22" H
Price: \$1,899.99	Price: \$1089.99	Price: \$7,449.00	Price: \$2,819.00	Price: \$3,960.00

(Redwood Energy, 2018)

Best Outdoor Electric Fireplaces

Modern Flames Nova	Touchstone Sideline	Amantii ZECL-39	Amantii ZECL-30	Amantii BI-40 Panorama
				
Size: 56" W x 23" H x 12" D	Size: 50" W x 17.9" H x 6" D	Size: 37.5" W x 32" H 8.5" D	Size: 29.5" W x 24.75" H x 8.5" D	Size: 38.7" W x 23.7" H x 6.8" D
Price: \$1,549.00	Price: \$574.00	Price: \$1,299.00	Price: \$899.00	Price: \$1,618.00

(Redwood Energy, 2018)

Best Wall-Mount Electric Fireplaces

Dimplex Opti-Myst Pro 400	OnyxXL	3G Plus	Northwest	Napoleon Allure
				
Size: 19.3" W x 32.4" H x 10" D	Size: 72 " W x 21.8" H x 5.7" D	Size: 50" W x 8.35" H x 4.7" D	Size: 56" W x 20" H x 4.8" D	Size: 102" W x 24.4" H x 7.9" D
Price: \$1749.06	Price: \$899.00	Price: \$229.98	Price: \$449.99	Price: \$2,099.99

(Redwood Energy, 2018)

Best Portable/Small Electric Fireplaces

Dimplex Opti-Myst Pro 500	Golden Vantage	AKDY Mantel Heater	H&B Designs	Northwest 
				
Size: 20" W x 9.5" H x 12" D	Size: 20" W x 23" H x 11.3" D	Size: 19.7" W x 23" H x 10" D	Size: 14.8" W x 12" H x 9.8" D	Size: 13.5" W x 6.75" H x 9.7" D
Price: \$1300.00	Price: \$99.99	Price: \$77.77	Price: \$49.90	Price: \$59.99

(Redwood Energy, 2018)

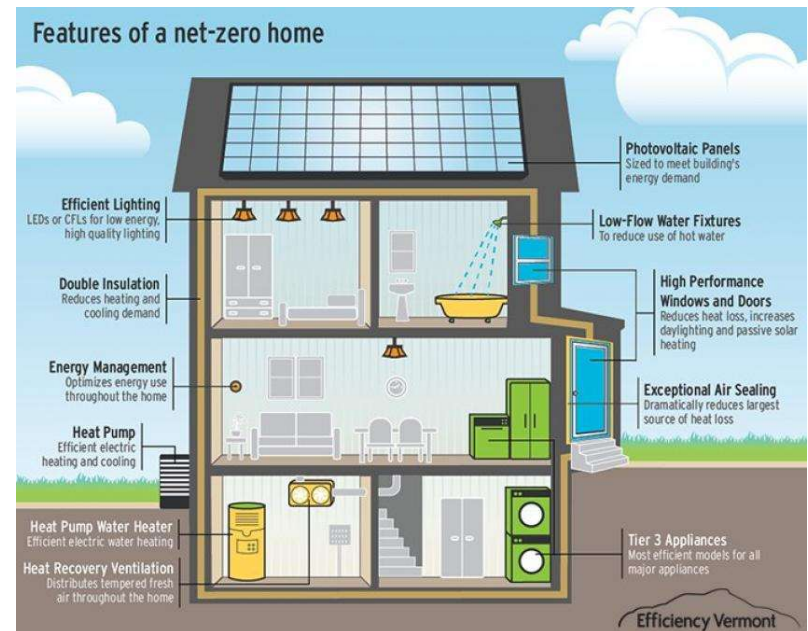
Best Large Electric Fireplaces

Dimplex IgniteXL	Dimplex Lukas	Dunkirk	Southern Enterprises	Built-in Dynasty
				
Size: 20" W x 9.5" H x 12" D	Size: 48.4" W x 45.9" H x " D	Size: 45" W x 40" H x 14.5" D	Size: 14.8" W x 12" H x 9.8" D	Size: 60" W x 24.4" H x 5" D
Price: \$1300.00	Price: \$315.82	Price: \$599.00	Price: \$49.90	Price: \$1,990.00

(Redwood Energy, 2018)

Role in Zero-Net Energy Housing

- Electric fireplaces are mainly installed for the ambiance of a fire.
 - Reduce cost
 - Helps eliminates the need of combustion for the ambiance a fire.
 - Help implement zone heating



(ZNE Housing, 2019)
(Heat Surge, 2019)

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Questions??