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Who Is Getting Hurt? The Characteristic Of A Workplace Electrical Fatality

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Learning Objectives

1. Determine what occupations are at risk of electrical incidents
2. Understand the human factor involved in electrical fatalities
3. Determine the causes of electrical occupation fatalities
4. Understand the importance of general electrical workplace safety in non-electrical occupations

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Electrical Fatality Trends: 2011 - 2020

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Data Sources

Occupational Safety and Health Administration
Accident Investigation Summaries (OSHA 170 form)
Fatality and Catastrophe Investigation Summaries are developed after OSHA conducts an inspection in response to a fatality or catastrophe. The summaries provide a complete description of the incident, generally including events leading to the incident and causal factors. It must have resulted from a traumatic injury.

- Summaries must undergo a process for screening personal information and adding keywords that may cause some additional delay in posting.

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Data Sources

Bureau of Labor Statistics: Census of Fatal Occupational Injuries (CFOI)
"The Census of Fatal Occupational Injuries is the most complete count of fatal work injuries in the United States. A workplace fatality must meet the following criteria to be included in the CFOI:

- It must have resulted from a traumatic injury;
- The incident that led to the death must have occurred in the United States, its territories, or its territorial waters or airspace;
- It must be related to work."

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Workplace Fatalities and Injuries

Occupational Safety and Health Administration,
2011 - 2020

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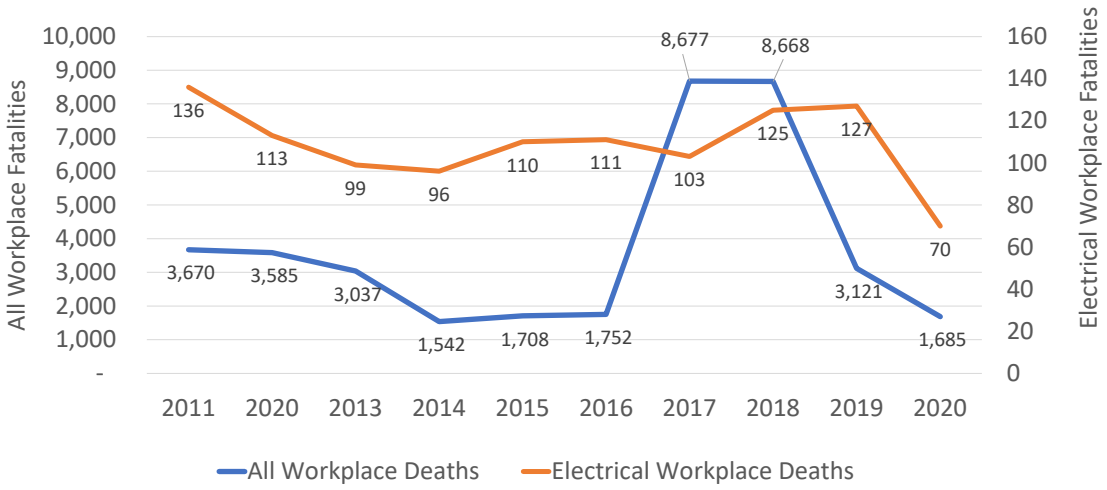
OSHA Reported Workplace Fatalities 2011 - 2020



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OSHA Workplace Fatalities 2011 - 2020

Summary:

- 37,455 workplace fatalities reported by OSHA between 2011 – 2020
- 1,090 (3%) were caused by contact with or exposure to electricity
- 340 (31%) fatalities were in electrical occupations
- 750 (69%) fatalities were in non-electrical occupations
- 411 (38%) fatalities were caused by contact with overhead power lines

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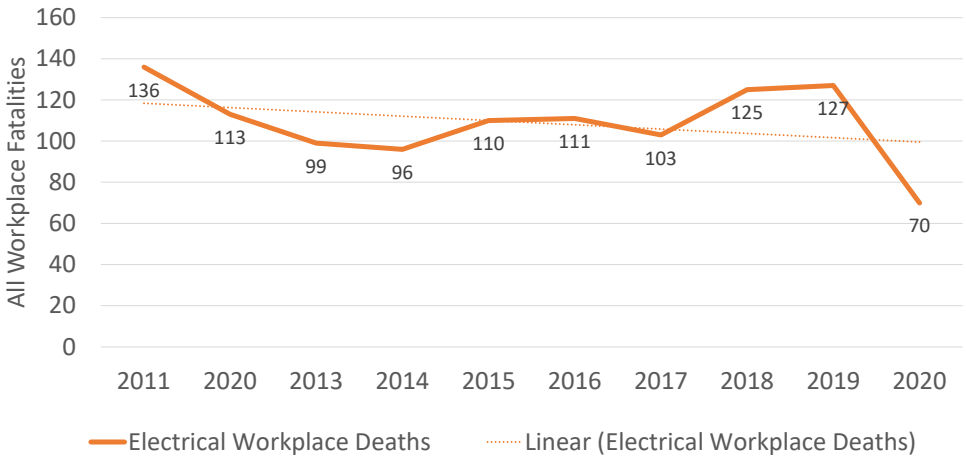
OSHA Reported Workplace Fatalities 2011 - 2020



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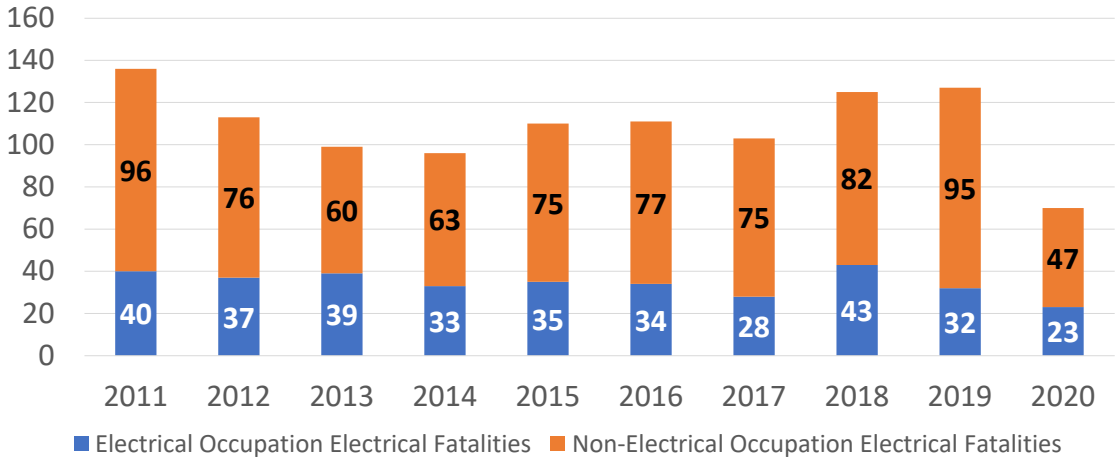
Electrical Fatalities, Electrical and Non-Electrical Occupations, 2011 - 2020



*as of 06/15/2021

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OSHA states that all workers in the occupations in this table, with the exceptions of electricians and welders, "do not need to be trained [in electrical safety] if their work or the work of those they supervise does not bring them or the employees they supervise close enough to exposed parts of electric circuits operating at 50 volts or more to ground for a hazard to exist."

OSHA TABLE S-4. TYPICAL OCCUPATIONAL CATEGORIES OF EMPLOYEES FACING A HIGHER-THAN-NORMAL RISK OF ELECTRICAL ACCIDENT	
Blue-collar supervisors	Material handling equipment operators
Electrical and electronic engineers	Mechanics and repairers
Electrical and electronic equipment assemblers	Painters
Electrical and electronic technicians	Riggers and roustabouts
Electricians	Stationary engineers
Industrial machine operators	Welders

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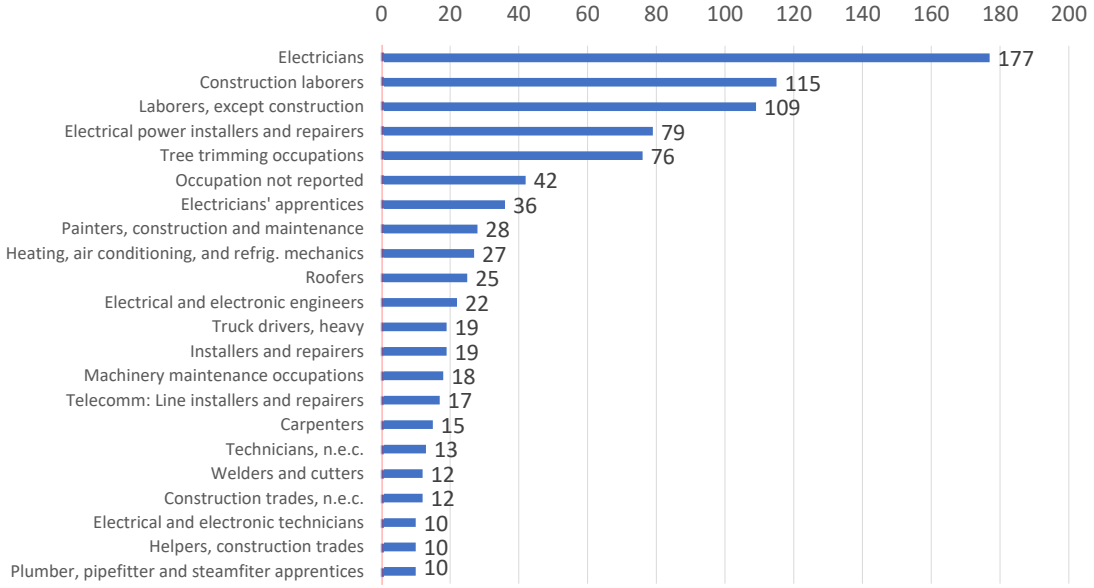
OCCUPATIONS WITH 10 OR MORE ELECTRICAL FATALITIES: 2011 - 2020



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OSHA Workplace Fatalities 2011 - 2020

Task Assigned During Fatality, Electrical Occupations 2011 - 2020

Occupation	Regularly Assigned Task	Task Not Regularly Assigned
Electricians	53%	46%
Electrical power installers and repairers	58%	42%
Electricians' apprentices	56%	44%
Electrical and electronic engineers	52%	48%
Electrical and electronic technicians	30%	70%
Supervisors; electricians & power transmission installers	88%	22%
Electrical and electronic equipment assemblers	60%	40%
Electronic repairers, communications. & industrial equipment	80%	20%

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OSHA Workplace Fatalities 2011 - 2020

Human Factor Leading To Electrical Fatality, Electrical Occupations, As Reported To OSHA, 2011 - 2020

Human Factor	Pct. Of Fatalities
Other	28.5%
Misjudgment of A Hazardous Situation	27.3%
Lockout / Tagout Procedure Malfunction	13.7%
Insufficient / Lack of Protective Work Clothing / Equipment	9.6%
Equipment Inappropriate for Operation	3.5%
Malfunction in Securing / Warning Operation	3.5%
Insufficient / Lack of Written Work Practice Program	2.9%
Material-Handling Procedure Inappropriate	2.9%
Safety Devices Removed / Inoperable	2.6%
Insufficient / Lack of Engineering Controls	2.3%
Position Inappropriate for Task	1.7%
Perception Malfunction Related to Task-Environment	0.58%
Defective Equipment in Use	0.3%
Distracting Actions by Others	0.3%

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For better context of the human factor involved in the injury, the authors reviewed the narrative provided for every electrical occupation electrical fatality and applied one or more of the following four categories.

Human Factor	Description	Human Factor	Description
Lockout / Tagout Failure or Safety Controls Removed	The fatal injury narrative mentions the removal of safety devices or a failure of a lockout / tagout procedure.	Lack of Personal Protective Equipment	The narrative mentions the lack of personal protective equipment when the fatal injury occurred.
Working on or near energized conductors / energized parts (excludes overhead power lines)	The fatal injury occurred due to contact with energized conductors or equipment. This can be from the equipment being worked on or nearby equipment or wires.	Contact with Overhead Power Lines	The fatal injury occurred from contact with overhead power lines. Excludes contact with other energized equipment or wires.

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Human Factor Assigned To Electrical Occupation Fatality

	Working on or Near Energized Conductors / Parts	Contact w/ Overhead Power Lines	Lockout / Tagout Failure	Lack of PPE
Electricians	156	11	21	15
Electrical Power Installers / Repairers	39	38	10	7
Electricians' Apprentices	29	4	3	1
Electrical & Electronic Engineers	18	3	4	3
Electrical & Electronic Technicians	10	-	-	-
Supervisors (Electricians & Power Transm. Installers)	8	3	1	1
Electrical & Electronic Equipment Assemblers	5	3	1	1
Electronic Repairers, Comms. & Indus. Equip.	5	-	1	1

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OSHA Workplace Fatalities 2011 - 2020

Human Factor Assigned To Electrical Occupation Fatality

Human Factor	Total Fatalities
Working on or Near Energized Conductors / Parts	270
Contact w/ Overhead Power Lines	62
Lockout / Tagout Failure	41
Lack of PPE	29

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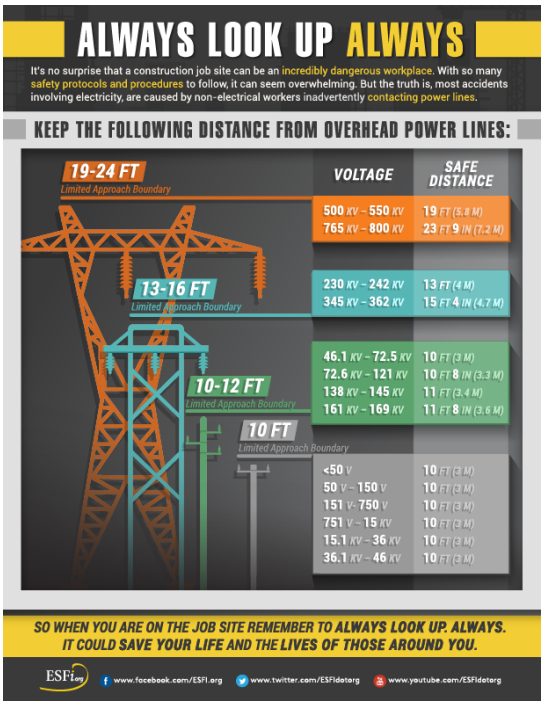

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OSHA Workplace Fatalities 2011 - 2020

Electrical Occupation	Percent of Electrical Occupation Fatalities (340 cases)	Fatalities	Percentage of All Occupation Fatalities (1090 cases)
Electricians	52%	177	11%
Electrical power installers and repairers	23%	79	7%
Electricians' apprentices	10%	34	3%
Electrical and electronic engineers	6%	21	2%
Electrical and electronic technicians	3%	10	1%
Supervisors; electricians & power transm. install.	3%	9	1%

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Non-Electrical Occupations With 10 Or More Electrical Fatalities: 2011 - 2020

Occupation	Fatalities	Occupation	Fatalities
Construction laborers	115	Machinery maintenance occupations	18
Laborers, except construction	109	Telecomm: Line installers and repairers	17
Tree trimming occupations	76	Carpenters	15
Painters, construction and maintenance	28	Technicians (not elsewhere classified)	13
Heating, air conditioning, and refrig. mechanics	27	Construction trades (not elsewhere classified)	12
Roofers	25	Welders and cutters	12
Installers and repairers	19	Plumber, pipefitter and steamfitter apprentices	10
Truck drivers, heavy	19	Helpers, construction trades	10

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Non-Electrical Occupation Workplace Fatalities 2011 - 2020

Task Assigned During Fatality, Select Non-Electrical Occupations 2011 - 2020

Occupation	Regularly Assigned Task	Task Not Regularly Assigned
Construction laborers	35%	65%
Laborers, except construction	49%	51%
Tree trimming occupations	42%	58%
Painters, construction and maintenance	57%	43%
Heating, air conditioning, and refrig. mechanics	60%	40%
Roofers	48%	52%
Installers and repairers	47%	53%
TOTAL (All Non-Electrical Occupations)	**48%**	**52%**

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Non-Electrical Occupation Workplace Fatalities 2011 - 2020

Human Factor Leading To Electrical Fatality, Non-Electrical Occupations, As Reported To OSHA, 2011 - 2020

Human Factor	Pct. Of Fatalities
Misjudgment of A Hazardous Situation	38%
Other	29%
Position Inappropriate for Task	7%
Equipment Inappropriate for Operation	5%
Insufficient / Lack of Written Work Practice Program	4%
Lockout / Tagout Procedure Malfunction	3%
Insufficient / Lack of Protective Work Clothing / Equipment	3%
Material-Handling Procedure Inappropriate	3%
Malfunction in Securing / Warning Operation	2%
Safety Devices Removed / Inoperable	2%
Insufficient / Lack of Engineering Controls	2%
Perception Malfunction Related to Task-Environment	1%
Defective Equipment in Use	1%

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Overhead Power Line Fatalities

Occupational Safety and Health Administration, 2011 - 2020

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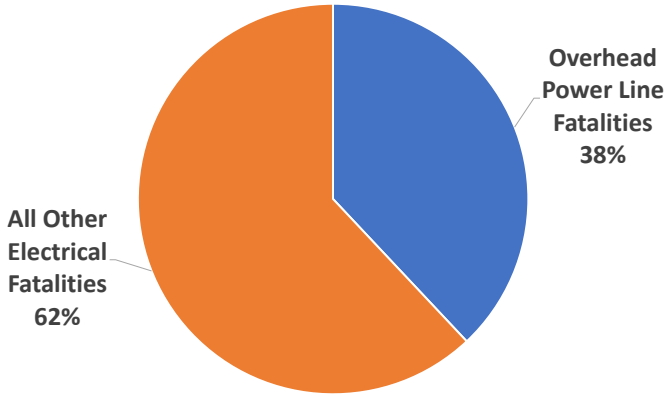
Overhead Power Line Workplace Fatalities 2011 - 2020



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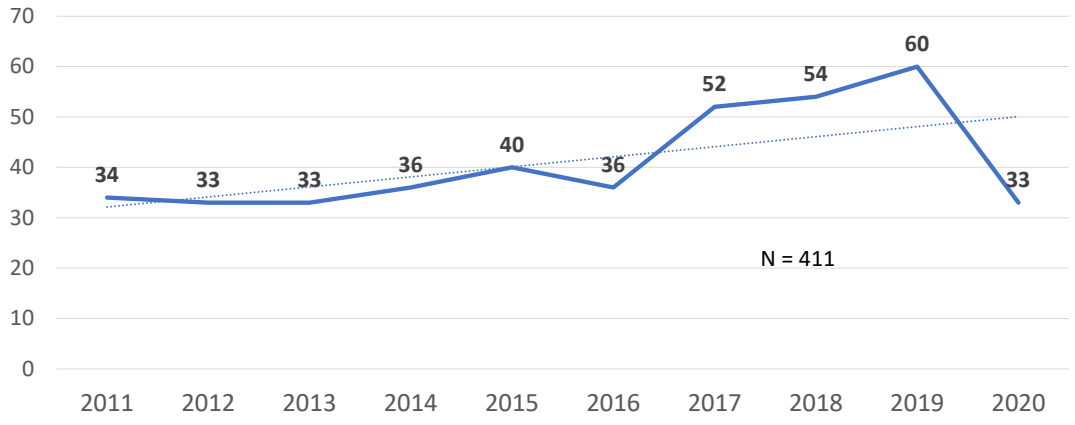
Overhead Power Line Workplace Fatalities 2011 - 2020



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Overhead Power Line Workplace Fatalities 2011 - 2020

Occupations with 10 or more Overhead Power Line Fatalities: 2011 - 2020

Occupation	Fatalities
Construction Laborers	66
Tree Trimming Occupations	57
Laborers, Except Construction	45
Electrical Power Installers and Repairers	40
Painters, Construction and Maintenance	21
Truck Drivers, Heavy	17
Telecomm: Line Installers and Repairers	16
Roofers	14
Electricians	11

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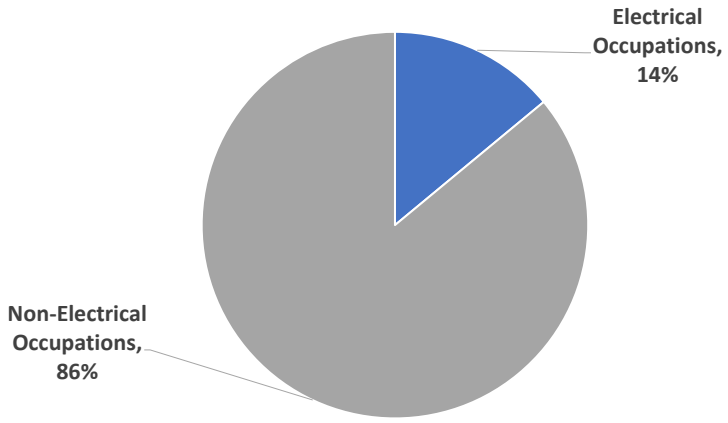
Overhead Power Line Workplace Fatalities 2011 - 2020

Overhead Power Line Fatalities: 2011 - 2020



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Overhead Power Line Workplace Fatalities 2011 - 2020

Task Assigned, Overhead Power Line Fatalities, Select Occupations

Occupation	Task Regularly Assigned	Task Not Regularly Assigned
Construction Laborers	20	46
Tree Trimming Occupations	21	36
Laborers, Except Construction	23	22
Electrical Power Installers and Repairers	21	19
Painters, Construction and Maintenance	10	11
Truck Drivers, Heavy	6	11
Telecomm: Line Installers and Repairers	10	6
Roofers	7	7
Electricians	5	6
All Occupations	188 (46%)	223 (54%)

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Where Electrical Fatalities Occur

Occupational Safety and Health Administration,
2011 - 2020

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Where Electrical Fatalities Occur: 2011 - 2020

Top 10 U.S. State Electrical Fatalities Occurred and BLS Workforce Size

State	Percentage of Electrical Fatalities	BLS Workforce Size by Ranking (2021)
Texas	16%	2 (9% of workforce)
Florida	11%	3 (6% of workforce)
California	7%	1 (12% of workforce)
Pennsylvania	4%	5 (4% of workforce)
Illinois	4%	6 (4% of workforce)
Georgia	4%	8 (4% of workforce)
New York	3%	4 (6% of workforce)
Oklahoma	3%	28 (1% of workforce)
Ohio	3%	7 (4% of workforce)
Virginia	3%	12 (3% of workforce)

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Bureau of Labor Statistics Workplace Fatalities 2011 - 2020

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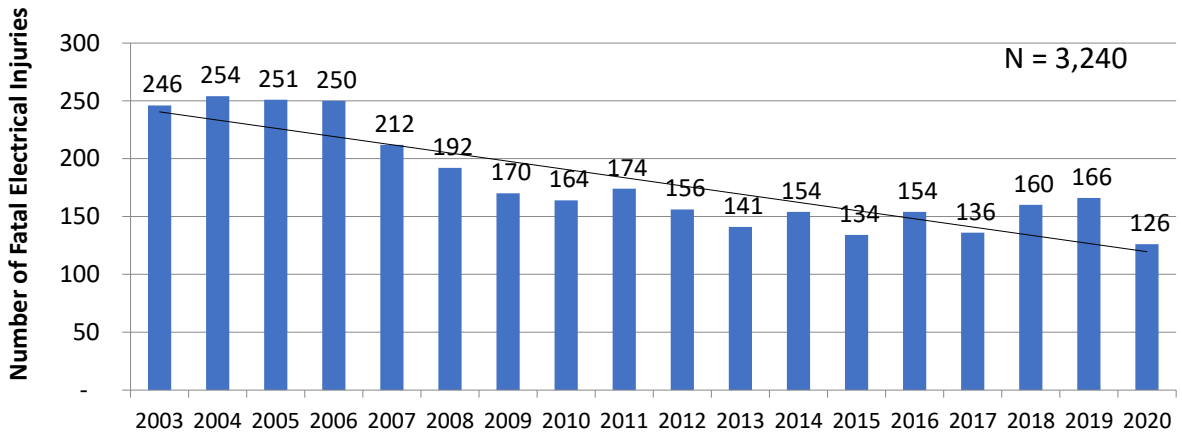
Number of Fatal Electrical Injuries, by Event Code, All Ownerships, 2003 - 2020



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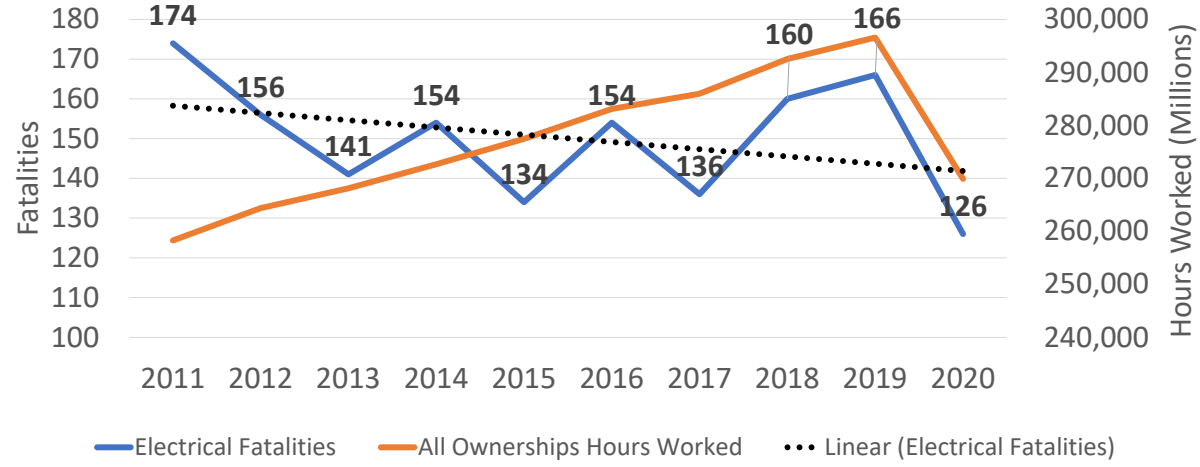
BLS Workplace Fatalities 2011 - 2020

Electrical Fatalities vs. Hours Worked, 2011 - 2020



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BLS Workplace Fatalities 2011 - 2020

- There were 126 electrical fatalities in 2020. A 24% decrease over 2019 and the lowest number of electrical fatalities recorded (recording started in 2003).
  - There was a 10% drop in total hours worked in the United States in 2020.
- Contact with / exposure to electric current accounted for 2.6% of all fatalities in 2020. This is a 19% drop from 2019 and a return to 2017 levels.
- Electrical fatality rates were 0.09 fatalities per 100,000 workers (22% drop from 2019) in 2020. The rate for all fatalities was 3.5 per 100,000 workers in 2020, slightly above the 2019 rate.

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BLS Workplace Fatalities 2011 - 2020

- The mining industry had the highest rate of fatal electrical injuries (0.8 / 100,000) followed by the construction industry (0.6 / 100,000) in 2020. All industries had 0.1 fatalities per 100,000 workers.
- In 2020, 5.3% of all electrical incidents were fatal.
- The number of electrical fatalities varied between ages:
  - 7% of electrical fatalities occurred in workers aged 20 – 24
  - 33% of electrical fatalities occurred in workers aged 25 – 34
  - 21% of electrical fatalities occurred in workers aged 34 – 44
  - 18% of electrical fatalities occurred in workers aged 45 – 54
  - 17% of electrical fatalities occurred in workers aged 55 – 64

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BLS Workplace Fatalities 2011 - 2020

- Hispanic or Latino workers accounted for 40% of electrical fatalities, a 24% increase over 2019. Hispanic or Latino workers account for 18% of the workforce.
- "Constructing, Repairing, Cleaning" accounted for the leading worker activity for electrical fatalities at 64%. "Using or Operating Tools, Machinery" accounted for 22% of electrical fatalities.
- 33% of all electrical fatalities occurred at a private residence. Industrial places and premises accounted for another 31% of fatalities. Streets and highway accounted for 13%, public buildings accounted for 8%, and farm for 7%.

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BLS Workplace Fatalities 2011 - 2020

- Occupations involved in electrical fatalities:
  - Construction and Extraction Occupations: 44%
  - Installation, Maintenance, and Repair Occupations: 20%
  - Building and Grounds Cleaning and Maintenance Occupations: 13%
  - Transportations and Material Moving Occupations: 6%
  - Management Occupations: 5%
  - Farming, Fishing, and Forestry Occupations: 3%
- Private industry accounted for 154 (94%) of the electrical fatalities.

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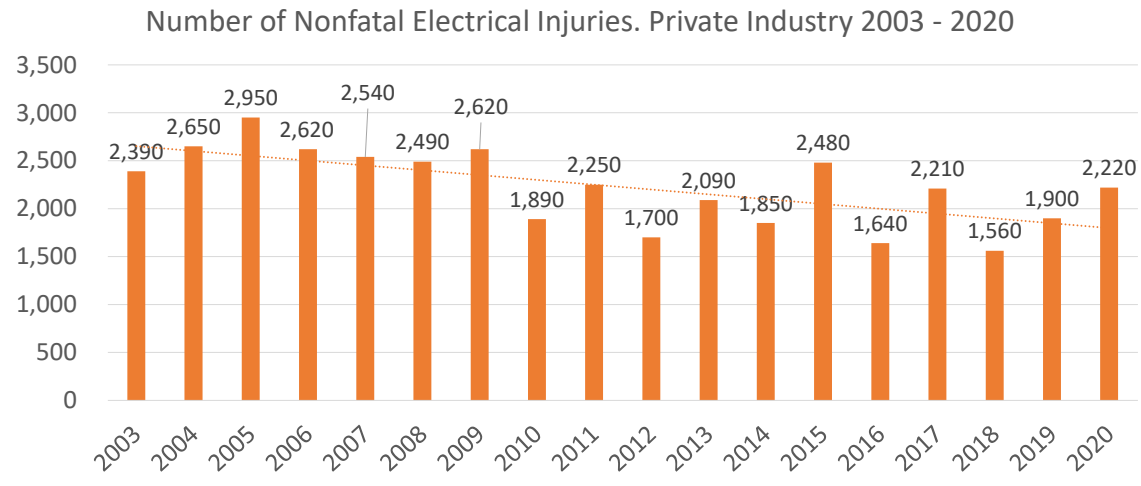
BLS Workplace Fatalities 2011 - 2020



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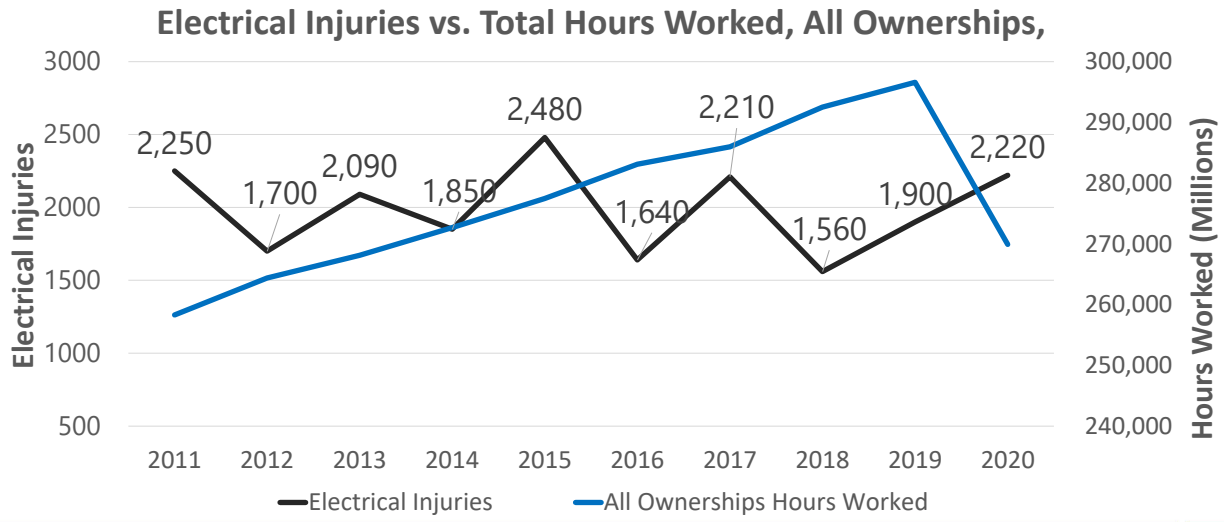
BLS Workplace Fatalities 2011 - 2020



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Median Number of Days Away from Work for Nonfatal Electrical injuries, by Event, Private Industry, 2011 - 2020

Event or Exposure	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Exposure to Electricity	6	4	16	4	5	5	10	4	9	3
Direct Exposure to Electricity	12	4	35	10	5	7	4	4	9	2
Direct Exposure to Electricity, 220 Volts or less	6	4	3	9	5	2	4	4	4	3
Direct Exposure to Electricity, Greater than 220 Volts	45	2	24	10	2	22	12	7	29	7
Indirect Exposure to Electricity	5	5	3	1	20	5	4	2	10	5
Indirect Exposure to Electricity, 220 Volts or Less	2	9	2	1	5	5	4	2	17	5
Indirect Exposure to Electricity, Greater than 220 Volts	5	6	63	10	49	2	20	22	3	-

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BLS Workplace Fatalities 2011 - 2020

- There were 2,220 nonfatal electrical injuries involving days away from work. This was a 17% increase over 2019 and a return to the same levels as 2017.
- 0.19% of all nonfatal injuries resulting in days away from work could be attributed to electricity during 2020. In 2019, 0.21% could be attributed to electricity. A total of 1,176,340 workplace injuries occurred in 2020. Of these cases, 33.2% (390,020 cases) were categorized as other diseases due to viruses not elsewhere classified, which includes reported COVID-19-pandemic related illnesses.
- 13% of electrical injuries occurred in Hispanic or Latino workers, compared to 40% of fatalities.

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BLS Workplace Fatalities 2011 - 2020

- 65% of injuries occurred in service-providing industries while 35% occurred in good-producing industries.
- Age of worker involved in nonfatal electrical injury:
  - 16 – 19 years old: 2%
  - 20 – 24 years old: 22%
  - 25 – 34 years old: 24%
  - 35 – 44 years old: 22%
  - 45 – 54 years old: 16%
  - 55 – 64 years old: 7%
  - 65 years and over: 1%

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BLS Workplace Fatalities 2011 - 2020

- Occupation of worker involved in non-electrical injury:
  - Installation, Maintenance, and Repair: 31%
  - Service: 25%
  - Construction and Extraction: 21%
  - Production: 11%
  - Transportations and Material Moving: 5%
  - Management, Business, Financial: 2%
  - Sales and Related: 1%
  - Healthcare Practitioners and Technical: 1%
  - Computer, Engineering and Science: 1%
  - Office and Administrative Support: 1%

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BLS Workplace Fatalities 2011 - 2020

Length of service with employer when injury occurred:

- Less than 3 months: 26%
- 3 months to 11 months: 10%
- 1 year to 5 years: 32%
- More than 5 years: 31%

Days when nonfatal electrical injury occurred:

- Sunday: 3%
- Monday: 11%
- Tuesday: 33%
- Wednesday: 14%
- Thursday: 27%
- Friday: 4%
- Saturday: 8%

Hours worked when injury occurred:

- Less than 1 hour: 2%
- 1 - 2 hours: 9%
- 2 - 4 hours: 15%
- 4 - 6 hours: 32%
- 6 - 8 hours: 10%
- 8 - 10 hours: 4%
- 10 – 12 hours: 1%
- Not reported: 27%

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National Electrical Safety Month 2021

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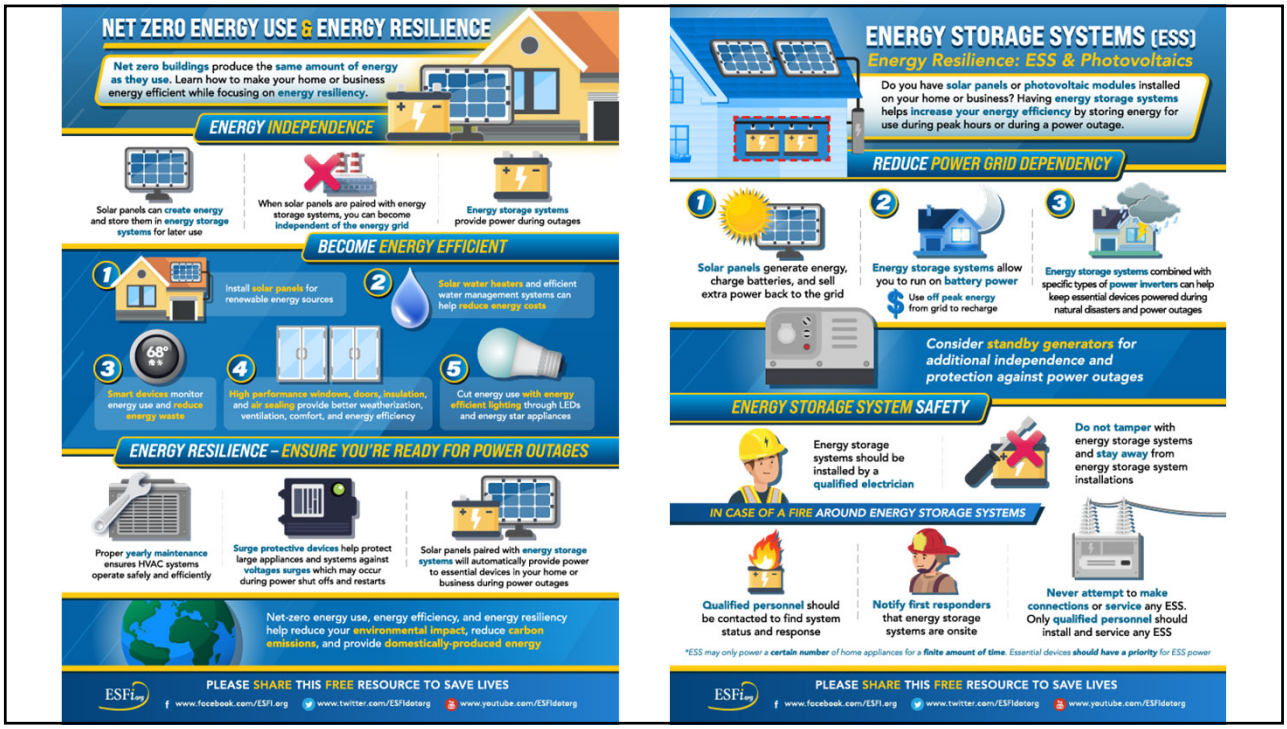
NET ZERO ENERGY USE & ENERGY RESILIENCE
Net zero buildings produce the same amount of energy as they use. Learn how to make your home or business energy efficient while focusing on energy resiliency.
ENERGY INDEPENDENCE
Solar panels can create energy and store them in energy storage systems for later use
When solar panels are paired with energy storage systems, you can become independent of the energy grid
Energy storage systems provide power during outages
BECOME ENERGY EFFICIENT
1 Install solar panels for renewable energy sources
2 Solar water heaters and efficient water management systems can help reduce energy costs
3 Smart devices monitor energy use and reduce energy waste
4 High performance windows, doors, insulation, and air sealing provide better weatherization, ventilation, comfort, and energy efficiency
5 Cut energy use with energy efficient lighting through LEDs and energy star appliances
ENERGY RESILIENCE – ENSURE YOU'RE READY FOR POWER OUTAGES
Proper yearly maintenance ensures HVAC systems operate safely and efficiently
Surge protective devices help protect large appliances and systems against voltages surges which may occur during power shut offs and restarts
Solar panels paired with energy storage systems will automatically provide power to essential devices in your home or business during power outages
Net-zero energy use, energy efficiency, and energy resiliency help reduce your environmental impact, reduce carbon emissions, and provide domestically-produced energy
PLEASE SHARE THIS FREE RESOURCE TO SAVE LIVES
www.facebook.com/ESFI.org www.twitter.com/ESFIdotorg www.youtube.com/ESFIdotorg
ENERGY STORAGE SYSTEMS (ESS)
Energy Resilience: ESS & Photovoltaics
Do you have solar panels or photovoltaic modules installed on your home or business? Having energy storage systems helps increase your energy efficiency by storing energy for use during peak hours or during a power outage.
REDUCE POWER GRID DEPENDENCY
1 Solar panels generate energy, charge batteries, and sell extra power back to the grid
2 Energy storage systems allow you to run on battery power
Use off peak energy from grid to recharge
3 Energy storage systems combined with specific types of power inverters can help keep essential devices powered during natural disasters and power outages
Consider standby generators for additional independence and protection against power outages
ENERGY STORAGE SYSTEM SAFETY
Energy storage systems should be installed by a qualified electrician
Do not tamper with energy storage systems and stay away from energy storage system installations
IN CASE OF A FIRE AROUND ENERGY STORAGE SYSTEMS
Qualified personnel should be contacted to find system status and response
Notify first responders that energy storage systems are onsite
Never attempt to make connections or service any ESS. Only qualified personnel should install and service any ESS
*ESS may only power a certain number of home appliances for a finite amount of time. Essential devices should have a priority for ESS power
PLEASE SHARE THIS FREE RESOURCE TO SAVE LIVES
www.facebook.com/ESFI.org www.twitter.com/ESFIdotorg www.youtube.com/ESFIdotorg

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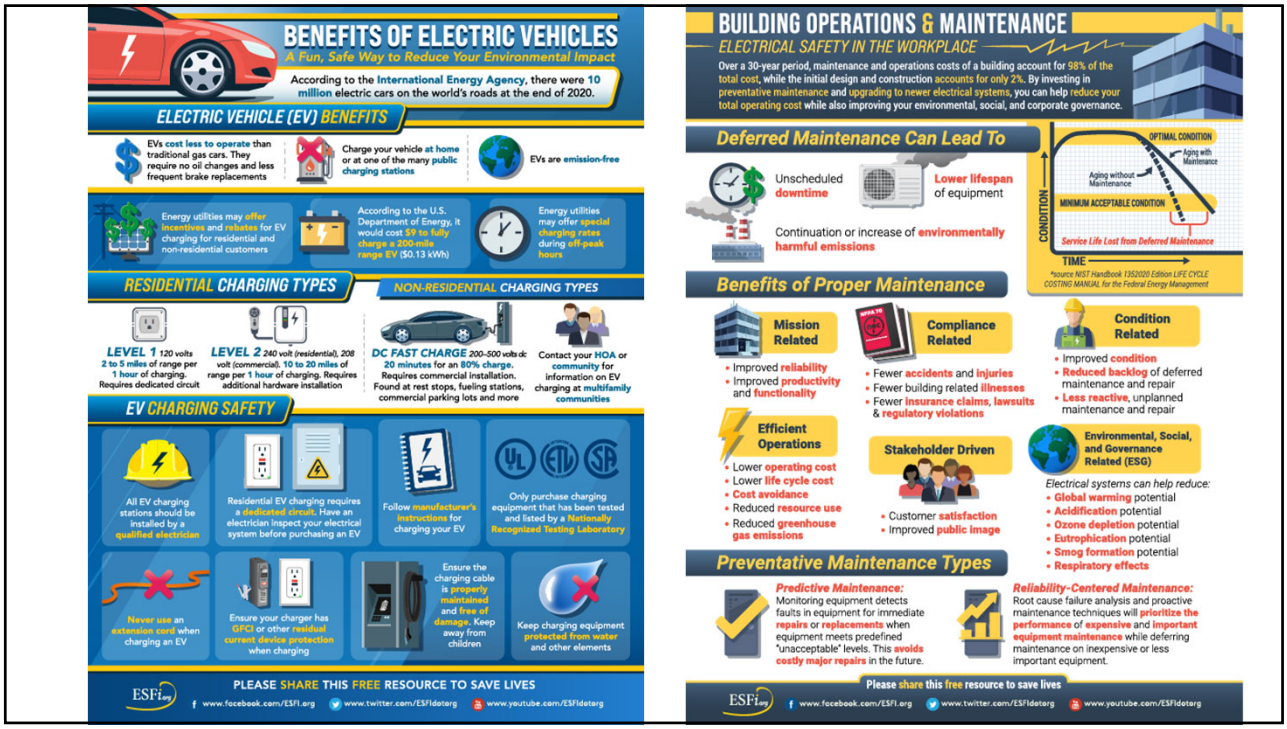
BENEFITS OF ELECTRIC VEHICLES
A Fun, Safe Way to Reduce Your Environmental Impact
According to the International Energy Agency, there were 10 million electric cars on the world's roads at the end of 2020.
ELECTRIC VEHICLE (EV) BENEFITS
EVs cost less to operate than traditional gas cars. They require no oil changes and less frequent brake replacements
Charge your vehicle at home or at one of the many public charging stations
EVs are emission-free
Energy utilities may offer incentives and rebates for EV charging for residential and non-residential customers
According to the U.S. Department of Energy, it would cost $9 to fully charge a 200-mile range EV ($0.13 kWh)
Energy utilities may offer special charging rates during off-peak hours
RESIDENTIAL CHARGING TYPES
NON-RESIDENTIAL CHARGING TYPES
LEVEL 1 120 volts 2 to 5 miles of range per 1 hour of charging. Requires dedicated circuit
LEVEL 2 240 volt (residential), 208 volt (commercial). 10 to 20 miles of range per 1 hour of charging. Requires additional hardware installation
DC FAST CHARGE 200-500 volts dc 20 minutes for an 80% charge. Requires commercial installation. Found at rest stops, fueling stations, commercial parking lots and more
Contact your HOA or community for information on EV charging at multifamily communities
EV CHARGING SAFETY
All EV charging stations should be installed by a qualified electrician
Residential EV charging requires a dedicated circuit. Have an electrician inspect your electrical system before purchasing an EV
Follow manufacturer's instructions for charging your EV
Only purchase charging equipment that has been tested and listed by a Nationally Recognized Testing Laboratory
Never use an extension cord when charging an EV
Ensure your charger has GFCI or other residual current device protection when charging
Ensure the charging cable is properly maintained and free of damage. Keep away from children
Keep charging equipment protected from water and other elements
PLEASE SHARE THIS FREE RESOURCE TO SAVE LIVES
www.facebook.com/ESFI.org www.twitter.com/ESFIdotorg www.youtube.com/ESFIdotorg
BUILDING OPERATIONS & MAINTENANCE
ELECTRICAL SAFETY IN THE WORKPLACE
Over a 30-year period, maintenance and operations costs of a building account for 98% of the total cost, while the initial design and construction accounts for only 2%. By investing in preventative maintenance and upgrading to newer electrical systems, you can help reduce your total operating cost while also improving your environmental, social, and corporate governance.
Deferred Maintenance Can Lead To
Unscheduled downtime
Lower lifespan of equipment
Continuation or increase of environmentally harmful emissions
OPTIMAL CONDITION
Aging with Maintenance
Aging without Maintenance
MINIMUM ACCEPTABLE CONDITION
Service Life Lost from Deferred Maintenance
CONDITION
TIME
*source NIST Handbook 135/2020 Edition LIFE CYCLE COSTING MANUAL for the Federal Energy Management
Benefits of Proper Maintenance
Mission Related
• Improved reliability
• Improved productivity and functionality
Compliance Related
• Fewer accidents and injuries
• Fewer building related illnesses
• Fewer insurance claims, lawsuits & regulatory violations
Condition Related
• Improved condition
• Reduced backlog of deferred maintenance and repair
• Less reactive, unplanned maintenance and repair
Efficient Operations
• Lower operating cost
• Lower life cycle cost
• Cost avoidance
• Reduced resource use
• Reduced greenhouse gas emissions
Stakeholder Driven
• Customer satisfaction
• Improved public image
Environmental, Social, and Governance Related (ESG)
Electrical systems can help reduce:
• Global warming potential
• Acidification potential
• Ozone depletion potential
• Eutrophication potential
• Smog formation potential
• Respiratory effects
Preventative Maintenance Types
Predictive Maintenance: Monitoring equipment detects faults in equipment for immediate repairs or replacements when equipment meets predefined "unacceptable" levels. This avoids costly major repairs in the future.
Reliability-Centered Maintenance: Root cause failure analysis and proactive maintenance techniques will prioritize the performance of expensive and important equipment maintenance while deferring maintenance on inexpensive or less important equipment.
Please share this free resource to save lives
www.facebook.com/ESFI.org www.twitter.com/ESFIdotorg www.youtube.com/ESFIdotorg

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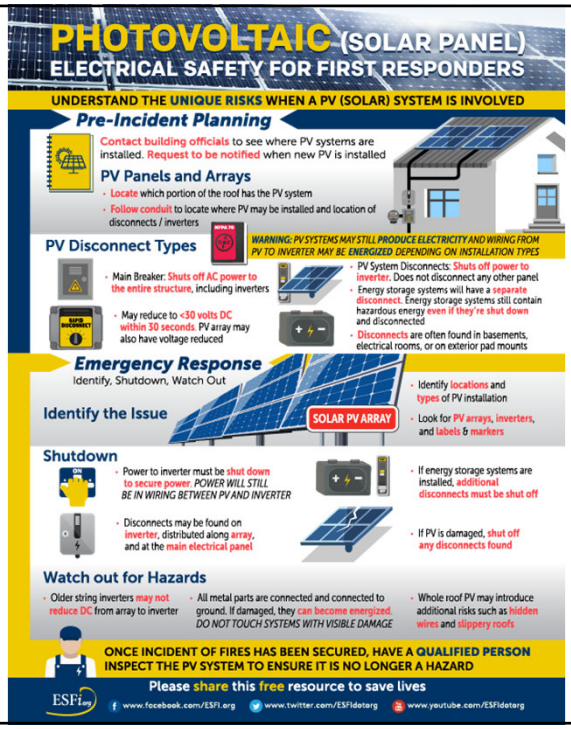

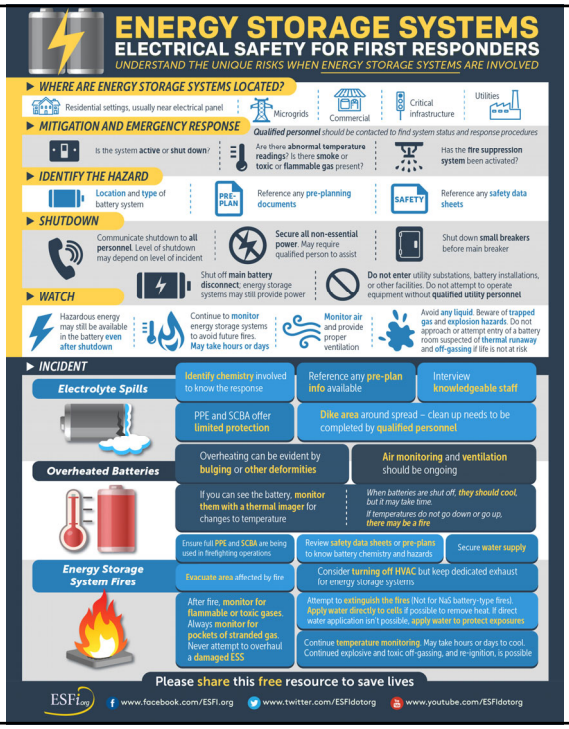

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Conclusions

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Conclusions

- 69% of electrical fatalities occurred in non-electrical occupations
- Hispanic or Latino workers accounted for 40% of electrical fatalities
- Working on or near energized conductors / energized parts is a leading cause of electrical fatalities amongst electrical occupations
- PPE is only mentioned in 8% of all electrical occupation fatalities
- Contact with overhead power lines continues to be one of the leading causes of electrical fatalities for both electrical and non-electrical occupations
  - 86% of overhead power line contact fatalities occurred in non-electrical occupations

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Conclusions

- The number of electrical fatalities corresponds with the size of the workforce and population of each state, with a few exceptions.
  - California, New York, and Ohio, with fewer electrical fatalities than their workforce size and population, and Texas, Florida, and Oklahoma, which have more fatalities than their workforce size.
  - A greater emphasis needs to be placed on educating non-electrical occupations on the dangers of working around electricity and ensuring that all electrical work is completed by electrical occupations. For electrical occupations, complacency needs to be combated to prevent electrical fatalities.

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Conclusions

- Electricity effects everyone
  - Include all workers in electrical safety training
- Non-electrical workers should have their own electrical safety training
  - Ensure all workers in all trades understand warning and hazard signage
  - Educate non-electrical workers on restricted area access
- Electrical work should only be completed by electrical workers
  - Empower qualified workers to warn other trades and employees of potential electrical hazards on the job site, it is **OUR** responsibility

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Thank You!

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Complete the Online Evaluation

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