Plug Loads and Appliances

Technology Families

- Electric vehicle supply equipment
- White goods
- Home entertainment, networking, office, and security equipment
- Medical equipment (residential and assisted living)
- Medical equipment (health care facilities and clinics)
- Mobile charging devices
- Miscellaneous Plug Load (residential)
- Miscellaneous Plug Load (commercial)

Technology Area

Plug loads and appliances is a broad category that includes electric vehicle supply equipment (EVSE), white good appliances, home entertainment and office equipment, medical equipment, and miscellaneous plug loads.

Unique Opportunities and Barriers

The EVSE end-use category is growing due to increasing electric vehicle adoption and there are a range of energy efficiency and demand flexibility opportunities. Efficiency gains for white good appliances still exist as do increased demand flexibility opportunities. Increasing induction range market acceptance and demand is an important strategy for building decarbonization. Plug loads remain a challenging area because of the large number of diffuse and diverse items that use relatively low amounts of power. Some appliances and electronics with connectivity and advanced intelligence features hold some new promise for both energy efficiency and demand flexibility.

Highlighted Priority Areas

Tech Family	Tech Subgroups	Definition	Priority
Electric vehicle supply equipment	Electric vehicle supply equipment (EVSE)	"EVSE" means the conductors, including the ungrounded, grounded, and equipment grounding conductors, the electric vehicle connectors, attachment plugs, and all other fittings, devices, power outlets, or apparatuses installed specifically for the purpose of delivering energy from the premises wiring to the electric vehicle. Charging cords with NEMA 5-15P and NEMA 5-20P attachment plugs are considered electric vehicle supply equipment. Excludes conductors, connectors, and fittings that are part of a vehicle. EVSE products are included with EVs by manufacturers, sold online, and sold through commercial channels.	High

Plug Loads and Appliances at a Glance

Column headers (pointing to the four middle color columns):
- Energy Savings Technical Potential
- Decarbonization Potential
- Codes & Standards Alignment
- Demand Flexibility Potential

Technology Family	Technology Subgroups	Definition	ETP Role	ETP Priority	Energy Savings Technical Potential	Decarbonization Potential	Codes & Standards Alignment	Demand Flexibility Potential	Technical Performance KI	Market Knowledge Index (KI)	Program Intervention KI
Electric vehicle supply equipment	Electric vehicle supply equipment (EVSE)	"EVSE" means the conductors, including the ungrounded, grounded, and equipment grounding conductors, the electric vehicle connectors, attachment plugs, and all other fittings, devices,	1-Lead	1-High					2-Medium	2-Medium	2-Medium
White goods	Refrigerator, Washer, Dryer, Dishwasher, induction cook tops, ranges	Major appliances in a home or some commercial spaces, that are used for routine housekeepings tasks such as cooking, washing and drying laundry, cleaning dishes, and food preservation.	2-Collaborate	3-Low					2-Medium	2-Medium	1-High
Home entertainment, networking, office, and security equipment	Televisions, Automation, security equipment, set-top boxes, home entertainment equipment, gaming consoles and computers, computers and peripherals, home networking equipment	Devices used for home entertainment, networking, office, and security	2-Collaborate	3-Low					2-Medium	2-Medium	2-Medium
Medical equipment (residential and assisted living)	Breathing machines, mobility devices	Oxygen Generators and Continuous positive airway pressure (CPAP) therapy is a small machine that supplies a constant and steady air pressure to sleeping users. Devices that allow for	3-Observe	3-Low					3-Low	3-Low	3-Low
Medical equipment (health care facilities and clinics)	Centrifuges, autoclaves, imaging equipment (also included in hospitals family)	Medical office plug loads. May not have high operation hours but do have high energy draw when they are being used.	3-Observe	3-Low					3-Low	3-Low	3-Low
Mobile charging devices	Laptops, tablets, mobile phones, portable rechargeable batteries, USB outlets, wireless charging devices	Computing devices of which an individual may have several. Due to the mobile nature, the use profile would be a mix of charging and concurrent use while charging.	3-Observe	3-Low					2-Medium	2-Medium	2-Medium
Miscellaneous Plug Load (residential)	Power tool charging/standby, advanced power strips, Coffee makers, lawn equipment, robotics (e.g., vacuums), pool pumps, electric pool heaters, other	Includes a variety of plug in tools and devices not accounted for in other rows and that serve a primarily residential market segment	3-Observe	3-Low					2-Medium	2-Medium	2-Medium
Miscellaneous Plug Load (commercial)	Commercial networking and computing, advance power strips, Robotics, Mixed reality devices, water coolers, lawn equipment, eMobility stations	Includes a variety of plug in tools and devices not accounted for in other rows and that serve a primarily commercial market segment	3-Observe	3-Low					2-Medium	2-Medium	2-Medium