## Charging Stations for Electric Cars at State Parks in and near Virginia

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The number of electric cars (Battery-Electric-Vehicles, BEVs, and Plug-in-Hybrid-Electric-Vehicles, PHEVs) on U.S. highways is growing exponentially. Therefore, although they are currently small in numbers, they will increase rapidly due to the nature of the exponential function. This is needed to reduce carbon-dioxide emissions that cause global warming and because U.S. extraction of crude oil, the material out of which gasoline is made, is <u>peaking</u>.

To help increase the number of electric cars on U.S. highways, charging stations need to be added quickly on those highways. State and national parks are places that should have charging stations.

The author recently noticed that the nineteen (19) West Virginia state parks have three 3 level-1 standard 120volts, nine 10 level-2 (240-volts <u>SAE J1772</u>) and 14 <u>Tesla Wall Connector</u> (240 volts) charging stations. That made the author curious about how many charging stations are at the state parks of his home state of Virginia and Virginia's three other boundary states, North Carolina, Tennessee and Maryland.

The state parks' lists are found by Google searches "<state name> state parks" and the charging stations for a state park are found using <u>Plugshare.com</u> to type in the state-park name.

Below are tables of the number of charging stations at those five states' state parks:

State Parks' Charging Stations	West Virginia			
	240-volts	240-volts	120-	
Name	SAE J1772	Tesla WC	volts	
Fairfax Stone, Elgin	0	0	0	
Pipestem Resort, Pipestem	3	0	3	
Babcock,Clifftop	0	0	0	
Blackwater Falls, Davis	1	3	0	
Hawks Nest,Ansted	1	3	0	
Watoga, Marlinton	0	0	0	
North Bend, Cairo	0	0	0	
Lost River, Mathias	0	0	0	
Bluestone, Hinton	0	0	0	
Cass Scenic Railroad, Cass	0	0	0	
Beartown, Hillsboro	0	0	0	
Little Beaver, Beaver	0	0	0	
Tygart Lake, Grafton	1	0	0	
Twin Falls Resort, Mullins	1	3	0	
Moncove Lake, Gap Mills	0	0	0	
Chief Logan, Logan	0	0	0	
Beech Fork, Barboursville	0	0	0	
Audra, Buckhannon	0	0	0	
Stonewall Resort State Park, Roanoke	1	2	0	
Cacapon Resort, Berkeley Springs	2	3	0	

Total	10	14	3	I	
http://www.stateparks.org/state-parks-to-offer-charging-stations/					

State Parks' Charging Stations	Virginia		
	240-volts	240-volts	
Name	SAE J1772	Tesla WC	120-volts
Claytor Lake, Dublin	0	0	0
Douthat, Millboro	0	0	0
Fairy Stone, Stuart	0	0	0
Hungry Mother, Marion	0	0	0
Pocahontas, Chesterfield	0	0	0
New River Trail, Max Meadows	0	0	0
Shenandoah River, Bentonville	0	0	0
Lake Anna, Spotsylvania	0	0	0
First Landing, Virginia Beach	0	0	0
Smith Mountain Lake, Huddleston	0	0	0
Occoneechee, Clarksville	0	0	0
Sky Meadows, Delaplane	0	0	0
James River, Gladstone	0	0	0
Grayson Highlands, Moujth of Wilson	0	0	0
Leesylvania, Woodbridge	0	0	0
High Bridge Trail, Farmville	0	0	0
Holiday Lake, Appomattox	0	0	0
Bear Creek Lake, Cumberland	0	0	0
Chippokes Plantation, Surry	0	0	0
Total	0	0	0

State Parks Charging Stations	North Carolina		
	240-volts	240-volts	
Name	SAE J1772	Tesla WC	120-volts
Hanging Rock, Danbury	0	0	0
Stone Mountain, Roaring Gap	0	0	0
Morrow Mountain, Albemarle	0	0	0
New River, Laurel Springs	0	0	0
Raven Rock, Lillington	0	0	0
Kerr Lake, Henderson	0	0	0
Carolina Beach, Carolina Beach	0	0	0
Crowders Mountain, Kings Mountain	0	0	0
Pilot Mountain, Pinnacle	0	0	0
Cliffs of the Neuse, Seven Springs	0	0	0
Gorges, Sapphire	0	0	0
Chimney Rock, Chimney Rock	0	0	0
Lake James, Nebo	0	0	0
South Mountains, Connelly Springs	0	0	0
Lake Norman, Troutman	0	0	0
Lumber River, Orrum	0	0	0
Merchants Millpond, Gatesville	0	0	0
Mount Mitchell, Burnsville	0	0	0
Grandfather Mountain, Banner Elk	0	0	0
Haw River, Browns Summit	0	0	0
Total	0	0	0

State Parks Charging Stations	Maryland		
	240-volts	240-volts	
Name	SAE J1772	Tesla WC	120-volts
Patapsco Valley, Ellicott City	0	0	0
Cunningham Falls, Thurmont	2*	0	0
Elk Neck, North Ease	0	0	0
Greenbrier, Boonsboro	0	0	0
Susquehanna, Havre De Grace	0	0	0
Rocks, Jarrettsville	0	0	0
Assateague, Berlin	0	0	0
Tuckahoe, Queen Anne	0	0	0
South Mountain, Boonsboro	0	0	0
Chapel Point, Port Tobacco	0	0	0
Sandy Point, Annapolis	0	0	0
Calvert Cliffs, Lusby	0	0	0
North Point, Edgemere	0	0	0
Gunpowder Falls, Middle River	0	0	0
Washington Monument, Middletown	0	0	0
Smallwood, Marbury	0	0	0
Rocky Gap, Flintstone	1**	2**	0
Martinak, Denton	0	0	0
Deep Creek Lake, Swanton	0	0	0
Total	3	2	0

State Parks Charging Stations	Maryland	
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\*at adjacent Cactocin Mountain Park

\*\*at adjacent Rocky Gap Casino

State Parks Charging Stations	Tennessee			
	240-volts	240-volts	120-	NEMA
Name	SAE J1772	Tesla WC	volts	14-50
Bledsoe Creek, Gallatin	0	0	1	1
Fall Creek Falls, Spencer	2	0	0	0
Rock Island, Rock Island	0	0	0	0
Norris Dam, Rock Top	0	0	0	0
Cumberland Mountain, Crossville	2*	0	0	0
Montgomery Bell, Burns	2*	0	0	0
Pickwick Landing, Counce	2*	0	0	0
Panther Creek, Morristown	0	0	0	0
Henry Horton, Chapel Hill	0	0	0	0
David Crockett, Lawrenceburg	0	0	0	0
Harrison Bay, Harrison	0	0	0	0
Frozen Head, Wartburg	0	0	0	0
Natchez Trace, Wildersville	0	0	0	0
Bicentennial Capitol Mall, Nashville	2	1	0	0
Old Stone Fort, Manchester	0	0	0	0
Paris Landing, Buchanan	2*	0	0	0
Roan Mountain, Roan Mountain	0	0	0	0
Big Ridge, Maynardville	0	0	0	0
Edgar Evins, Silver Point	0	0	1	1
Mathan Bedford Forrest, Eva	0	0	0	0
Radnor Lake, Oak Hill	2*	0	0	0
Total	14	1	2	2

State Parks Charging Stations Tennessee

\*not shown in Plugshare.com

Virginia, North Carolina, and Maryland need to follow West-Virginia's and Tennessee's examples and install charging stations for electric cars at their state parks.

## **Charging Stations**

- Level-1 is a standard 120-volts AC outlet that any electric car can use to charge.
- Level-2 is a 240-volts AC SAE J1772 outlet that any electric car can use to charge. Tesla cars require an adapter to charge at level-2 stations.
- Tesla Wall Connector is a 240 volts AC outlet designed solely for use by Tesla cars. However, • a device called <u>JDapter Stub</u> can be used by all electric cars to charge at version-I Tesla Wall Connectors.
- NEMA 14-50 is a 240-volts AC outlet that Tesla cars can use by means of an adapter and • most other electric cars can use if the portable EVSE that comes with the car is upgraded to 240-volts and an adapter is used. Campgrounds, such as KOA, have the NEMA 14-50 outlet.
- Level-3 is a 480-volts DC fast-charging outlet that some electric cars can use to charge. • There are two protocols: CHAdeMO for Asian cars and CCS for European and U.S. cars. Tesla cars can use CHAdeMO by means of an adapter.
- Tesla Supercharger provides DC high-power (120-kW) to charge only Tesla cars. •
- Locations of charging stations can be seen at Plugshare.com. •

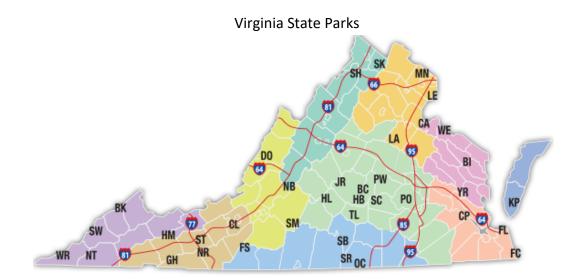
## Buying Tesla Wall Connector for your destination property? Contact

destinationcharging@tesla.com for help with attracting Tesla owners to your business.



## **Maps of State Parks**

area. For exact routes, refer to the afficial West Virginia highway map.



Bear Creek Lake (BC) Belle Isle (BI) Breaks Interstate (BK) \* Caledon (CA) Chippokes Plantation (CP) Claytor Lake (CL) Douthat (DO) Fairy Stone (FS) False Cape (FC) First Landing (FL) Grayson Highlands (GH) High Bridge Trail (HB) Holliday Lake (HL)

Hungry Mother (HM) James River (JR) Kiptopeke (KP) Lake Anna (LA) Leesylvania (LE) Mason Neck (MN) Natural Bridge (NB) Natural Tunnel (NT) New River Trail (NR) Occoneechee (OC) Pocahontas (PO) Powhatan (PW) Sailor's Creek Battlefield Historic (SC) Shenandoah River (SH) Shot Tower (ST) Sky Meadows (SK) Smith Mountain Lake (SM) Southwest Virginia Museum Historical (SW) Staunton River (SR) Staunton River (SR) Staunton River Battlefield (SB) Tabb Monument Twin Lakes (TL) Westmoreland (WE) Wilderness Road (WR) York River (YR)

