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The Electric Car: American Industry and Innovation 11/19/2009



1		Animated Open	
2	Antonio on Camera 	On Camera Open: <i>Hi, I'm Antonio Neves for the Dot News. This right here is a battery cell. And it could change the way people around the world power their cars.</i>	00:11
3	GM Factory 	Voice Over: Inside each cell, stored chemical energy is turned into electrical power. They are being used to build a new generation of batteries which can power anything from delivery trucks, to automobiles, to scooters.	00:20
4	Denise Gray on Camera 	Gray <i>We start off with a cell. And we will arrange those and to kind of group them together and we'll call those into modules and then you may have several of those modules put together to give you the entire battery pack.</i>	00:34
5	GM Modules/Factory 	Voice Over: Denise Gray is in charge of battery development for General Motors. Her lab is analyzing the technology needed to make electric vehicles practical. One breakthrough is the use of dry cell batteries made of Lithium... used today in cell phones and portable computers.	00:47
6	Denise Gray on Camera	Gray <i>Lithium gives me more energy in the same small package. And that's what makes it very attractive because I can get more energy out of a battery to move the car down the street.</i>	1:04

7	<p>Animation:</p> 	<p>Voice Over: In electric vehicles, the fuel is electricity stored in a battery. It provides power to one or more electric motors.</p>	1:14
8	<p>Recharging Station</p> 	<p>Voice Over: And like all batteries, they need to be recharged. This fall a convention was held in Detroit to examine ways to get electricity into the batteries of the new generation of electric vehicles. The electricity is generated back at power plants. Often they struggle to meet demand.</p>	1:24
9	<p>Michael Delaney on Camera</p> 	<p>Michael Delaney <i>We have to build our system // for the hottest day here in the summer in Southeast Michigan. We have to have enough capacity for our generation, our transmission lines that get the power out to our customers and then our distribution system, the local wires around the neighborhood, to meet that peak demand.</i></p>	1:42
1	<p>Power Plant</p> 	<p>Voice Over: Michael Delaney works for Detroit Edison, the power company in southeastern Michigan. He's part of a team working to make sure there is enough electricity available. An advantage is that most charging will be at night, when demand is low.</p>	1:58
1	<p>Michael Delaney on Camera:</p>	<p>Michael Delaney <i>There are points during the night—3, 4 AM where just people aren't using just as much electricity.</i></p>	2:13

1	<p>A average car generates 28 pounds of CO2 every 35 miles</p> 	<p>Voice Over: Part of the big push for electric vehicles is their benefit to the environment. Detroit Edison's research shows that generating the power to run one electric vehicle creates less pollution than running a gas engine.</p>	2:19
1	<p>Michael Delaney on Camera:</p>	<p>Michael Delany <i>We've run the numbers and even if you look at the most inefficient coal plant in our fleet, we still see a third reduction in CO2 so you're still reducing your carbon dioxide emissions by about a third if you switch from a traditional gasoline vehicle to a plug-in hybrid.</i></p>	2:31
1	<p>220 Volt Plug-In:</p> 	<p>Voice Over: The fastest way to charge an electric vehicle's batteries is to use 220 volts – the same level of power used for residential clothes dryersbut most outlets today are wired for 110 volts. Right now, there is no standard for the plug or the box... formulating one will require the government and manufacturers to work together. Mohan Sethi's company is working on developing an outlet for the home.</p>	2:48
1	<p>Mohan Sethi on Camera</p> 	<p>Mohan Sethi: <i>The most key factor here that we make sure we do it correctly right off the shoot. We keep it simple, straightforward for consumers to follow</i></p>	3:16

1	<p>More than 40 thousand jurisdictions require electrical Inspections.</p> 	<p>Voice Over: Trying to keep it simple is a challenge. Most people will have to install a new 220 volt outlet...that can be a costly and time consuming process that usually requires approvals from building inspectors. So who pays for it?</p>	3:24
1	<p>Safety Appliance Box</p> 	<p>Mohan Sethi <i>Should this appliance be a part of the vehicle costs? Should it be outside the vehicle costs? Should the installation be covered as part of the vehicle cost? Now what happens if you're buying it or leasing it? Those are some of the things being figured out.</i></p>	3:39
1	<p>Recharging Station:</p> 	<p>Voice Over: And what about when you need power away from home. Engineers are working on that too...developing technology to charge a car in ten to 15 minutes.</p>	3:50
1	<p>Antonio on Camera</p> 	<p>On Camera: <i>So what we are looking at right here is potentially the gas station of the future. No so different from what you see on the road right now. You pull out your credit card. Put it in. Grab this. Walk to your vehicle. Plug in, push charge and before you know it your vehicle is ready to go.</i></p>	4:00
2	<p>Students at Fair</p>	<p>Voice Over: Is the public ready for an electric car? NaJaRee Nixon of Detroit's Cass technical High School thinks so.</p>	4:19
2	<p>NaJaRee Nixon on Camera</p> 	<p>Nixon <i>We're not going to be able to rely on gasoline forever. We're going to need an alternative source of fuel for cars and electricity is perfect.</i></p>	4:27

2	Graphic build with stills 	Voice over: Most major auto makers have electric vehicles in the works. General Motors plans to start selling its car ... the Chevy Volt ... next year. But small companies are getting into the act too ... some of them non traditional.	4:33
2	Rick Clester on Camera 	Rick Clester <i>I think it does have to be cool.</i>	4:47
2	Antonio riding in a electric motorcycle 	Voice Over: Rick Clester of Myers Motors sells a three wheeler – officially classified as a motorcycle. He says it takes a dollar and half’s worth of electricity to go 60 miles. But it costs more than a similar gas powered vehicle because of the high cost of the batteries today.	4:50
2	Rick Clester on Camera	Rick Clester <i>I was early adapter into IBM-XD clone computers back in 1984. I paid \$4,000 for my computer and printer. Now for \$1,000 bucks you can get everything I had back then. So early adapters are going to pay a bit more</i>	5:07
2	At Electric Motor Vehicle Company 	Voice Over: If you want two wheels, Terry Richards of the Electric Motor Vehicle Company has a motorcycle and a motor scooter. Part of his pitch is that they are good for the environment.	5:21

2	<p>Terry Richards on Camera</p> 	<p>Terry Richards <i>You know we're seeing wind generators now. We're seeing commercial sized solar panel systems. So instead of buying a gasoline car that gets dirtier and dirtier as it gets older, We've got something that's going to get cleaner and cleaner.</i></p>	5:32
2	<p>Antonio on Camera</p>	<p>Voice Over: So how long before electric vehicles are commonplace? One comparison we kept hearing 26 years ago... no one had a cell phone.</p>	5:44
2	<p>Antonio on electric motorcycle</p> 	<p>On Camera: <i>That's a nice smooth ride. I feel like I should be fighting crime on it ... kinda...</i></p>	5:54
3		<p>Voice Over: Antonio Neves for the Dot News</p>	5:59
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