

Next Generation Science Standards Disciplinary Core Idea Index

Many Inside Energy resources can serve to support science and engineering education. These videos, explainers, podcasts, and lessons connect both directly and indirectly to many Disciplinary Core Ideas in the Next Generation Science Standards. Whether you are looking for a hook to pique your students' interest or an exemplary phenomenon to drive student inquiry and learning throughout an entire unit, Inside Energy may have exactly what you need.

You will notice that some resources can be connected to several DCIs. You may choose to focus on one DCI or use these resources to represent a phenomenon that can be investigated from many different angles, bundling the DCIs into a relevant and cohesive unit. Resources that have been identified as support for DCIs within Engineering, Technology, and Applications of Science can be used as examples of engineering problems and solutions and/or could be used to set the parameters for a student design challenge.

Please use this searchable table to find resources that support specific DCIs or themes.

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Disciplinary Core Idea	Title	Format
Earth Systems Science		
<i>ESS1B: Earth & the Solar System</i>	IE Questions: How Does A Solar Eclipse Affect Solar Power?	written post
	Making a Fracking Model Activity	lesson
<i>ESS2C: The Role of Water in Earth's Surface Processes</i>	IE Questions: Where Does Fracking Water Go?	written post
	If You Read Only One Story On Health And Fracking, Read This One	audio
	Wastewater Spills In North Dakota: What The Data Tell Us	written post
<i>ESS3A: Natural Resources</i>	A Watched Pot: What Is The Most Energy Efficient Way To Boil Water?	video
	Aspen's 100% Renewable City Claim	video
	Bring On The Heat, Says Coal Industry	audio
	Clean Or Contaminated? Residents Fear Tainted Water Post Fracking	audio
	Colorado State Of Mind: Solar Challenge, Health Effects Of Fracking	video
	Feasting on Fuel	video
	Feasting On Fuel: A Video Explainer	video
	Fort Collins: The Utility Of The Future?	audio
	From Dams To Healthy Rivers In The Northwest	video
	Getting Paid To Soak Up California Solar	audio
	Hot Waste: Getting Rid Of Drilling's Radioactive Leftovers	audio
	How Does A Carbon Tax Work? Explained... With Chickens	video
	How to Turn Poop into Power	video
	Hurricane's Impact On Oil Far From The Gulf	audio
	IE Questions: Fossil Fuel Primer	written post
	IE Questions: How Much Do Energy "Vampires" Cost Us?	written post
	IE Questions: Is Fracking Dangerous?	written post
	IE Questions: Super Grid! Spanning Continents In A Single Bound!	video
	IE Questions: What Are "Unproved" Reserves And Why Should You Care?	written post
	IE Questions: What Are Oil And Gas Reserves And Why Do They Matter?	written post
	IE Questions: What Is Inertia? And What's Its Role In Grid Reliability?	written post
	IE Questions: What Size Wind Generator Does An Average House Need?	video
	IE Questions: Where Does Fracking Water Go?	written post
	IE Questions: Why Does Wyoming Produce So Much Wastewater?	written post
	If You Read Only One Story On Health And Fracking, Read This One	audio
	Is Coal Key To Keeping The Lights On?	video
	Keeping Lights On Key Issue In Coal Vs. Renewable Battle	audio
	Making a Fracking Model Activity (forthcoming)	lesson

	Making Energy From Waste: The Other Natural Gas	audio
	New Study Of Air Toxics At Colorado Oil And Gas Sites	audio
	Oklahoma Earthquakes: Who Pays?	audio
	Our Food Processed Future: The Rising Energy Costs Of Convenience	audio
	Power Grid Reliability	lesson
	Protesters Say Pipelines Are Dangerous. Are They?	audio
	Rock Porosity Experiment (<i>forthcoming</i>)	lesson
	Shaking Up Supply And Demand To Make Renewables Work	video
	Southern California Gas: "We've Never Had An Escape This Large"	audio
	The Complicated Business Of Capturing Wind	video
	The Electricity Mix In The Western Grid Is Changing Before Our Eyes	audio
	Video: What Coloradans Need To Know About Methane Leaks	video
	Water Use in Hydraulic Fracturing (<i>forthcoming</i>)	lesson
	Wyoming Hosts First Wastewater-Powered Data Center In U.S.	audio
<i>ESS3B: Natural Hazards</i>	Hurricane's Impact On Oil Far From The Gulf	audio
	IE Questions: What Causes Blackouts?	written post
	Oklahoma Earthquakes: Who Pays?	audio
	What A Storm 93 Million Miles Away Means For Your Power	audio
<i>ESS3C: Human Impacts on Earth Systems</i>	Aspen's 100% Renewable City Claim	video
	Clean Or Contaminated? Residents Fear Tainted Water Post Fracking	audio
	Feasting on Fuel	video
	From Dams To Healthy Rivers In The Northwest	video
	Hot Waste: Getting Rid Of Drilling's Radioactive Leftovers	audio
	How Does A Carbon Tax Work? Explained... With Chickens	video
	IE Questions: Is Fracking Dangerous?	written post
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	Power Grid Reliability	lesson
	Southern California Gas: "We've Never Had An Escape This Large"	audio
	Wastewater Spills In North Dakota: What The Data Tell Us	written post
<i>ESS3D: Global</i>	Bring On The Heat, Says Coal Industry	audio

Climate Change	Colorado State Of Mind: Solar Challenge, Health Effects Of Fracking	video
	Energy Explained: How Much Energy	lesson
	Energy Explained: The Carbon Cycle	lesson
	Energy Explained: Where Does It Come From And How Much Do We Use?	video
Engineering, Technology & Applications of Science		
ETS1A: Defining & Delimiting & Engineering Problem Resources in this category may provide examples of engineering problems and/or opportunities for students to consider real life engineering problems.	A Watched Pot	lesson
	Fort Collins: The Utility Of The Future?	audio
	Gridlocked: Outside/In Podcast	audio
	No More Blackouts: How New York Is Protecting The Power Grid	audio
	On A Tiny Danish Island: Making Electricity Demand Meet Supply	audio
	Southern California Gas: "We've Never Had An Escape This Large"	audio
	Turning Wasted Heat into Power	lesson
	We Can Send A Probe To Pluto, But Energy Storage Remains Elusive	audio
ETS1B: Developing Possible Solutions Resources in this category may provide examples and/or opportunities for students to develop solutions to real life engineering problems.	A Watched Pot	lesson
	Colorado State Of Mind: Solar Challenge, Health Effects Of Fracking	video
	Fort Collins: The Utility Of The Future?	audio
	Getting Paid To Soak Up California Solar	audio
	IE Questions: Why Does It Take So Long To Fix A Blackout?	written post
	Turning Wasted Heat into Power	lesson
Life Sciences		
LS2B: Cycles of Matter & Energy Transfer in Ecosystems	Feasting on Fuel	video
	Feasting On Fuel: A Video Explainer	video
	How to Turn Poop into Power	video
	Making Energy From Waste: The Other Natural Gas	audio
	Our Food Processed Future: The Rising Energy Costs Of Convenience	audio
LS2C: Ecosystems Dynamic, Functioning & Resilience	Energy Explained: The Carbon Cycle	lesson
	Energy Explained: Where Does It Come From And How Much Do We Use?	video
	From Dams To Healthy Rivers In The Northwest	video
Physical Sciences		
PS1A: Structure & Property of Matter	Turning Wasted Heat into Power	lesson
PS2A: Forces and Motion	IE Questions: Do I Use More Gas In My Car Running The A/C, Or With The Windows Down?	audio
	IE Questions: What Is Inertia? And What's Its Role In Grid Reliability?	written post
	Power Grid Reliability	lesson
PS2B: Types of Interactions	IE Questions: Why don't we have wireless electricity?	video
	What A Storm 93 Million Miles Away Means For Your Power	audio
PS3A: Definitions of	A Watched Pot	lesson

Energy	A Watched Pot: What Is The Most Energy Efficient Way To Boil Water?	video
	Feasting on Fuel	video
	Feasting On Fuel: A Video Explainer	video
	Gridlocked: Outside/In Podcast	audio
	How Much Electricity Do You Use Each Month?	written post
	How to Turn Poop into Power	video
	IE Questions: Can We Turn Power Plants' Wasted Heat Into Power?	audio
	IE Questions: Combined Heat And Power – The Clean Energy Dark Horse	written post
	IE Questions: How Does A Solar Eclipse Affect Solar Power?	written post
	IE Questions: How Many Pieces of Candy Corn Would It Take To Charge Your Cell Phone?	written post
	IE Questions: What Keeps Our Electric Grid Humming?	written post
	IE Questions: What Size Wind Generator Does An Average House Need?	video
	IE Questions: Why don't we have wireless electricity?	video
	Keeping Lights On Key Issue In Coal Vs. Renewable Battle	audio
	Lost in Transmission	lesson
	Lost In Transmission: How Much Electricity Disappears Between A Power Plant And Your Plug?	video
	Making Energy From Waste: The Other Natural Gas	audio
	On A Tiny Danish Island: Making Electricity Demand Meet Supply	audio
	Our Food Processed Future: The Rising Energy Costs Of Convenience	audio
	Power Grid Reliability	lesson
	The Complicated Business Of Capturing Wind	video
	Turning Wasted Heat into Power	lesson
	We Can Send A Probe To Pluto, But Energy Storage Remains Elusive	audio
Wyoming Hosts First Wastewater-Powered Data Center In U.S.	audio	
PS3B: Conservation of Energy & Energy Transfer	A Watched Pot	lesson
	A Watched Pot: What Is The Most Energy Efficient Way To Boil Water?	video
	Electricity Losses State By State: Interactive	interactive
	Energy Explained: How Much Energy	lesson
	Energy Explained: Where Does It Come From And How Much Do We Use?	video
	Feasting On Fuel: A Video Explainer	video
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<i>PS3C: Relationships Between Energy and Forces</i>	IE Questions: Can We Turn Power Plants’ Wasted Heat Into Power?	audio
	IE Questions: Combined Heat And Power – The Clean Energy Dark Horse	written post
	IE Questions: What Keeps Our Electric Grid Humming?	written post
	Turning Wasted Heat into Power	lesson
	What A Storm 93 Million Miles Away Means For Your Power	audio