

**MEECS to Michigan K-12 Science Standards
November 2015**

Energy Resources (grades 7-9)

	1. Energy Use in Michigan - Then and Now	2. Michigan's Energy Resource Mix	3. Generating Michigan's Electricity	4. Non-Renewable Energy Choices and Impacts	5. Renewable Energy and Michigan	6. Energy Conservation and Efficiency: Leaks and Lights	7. Using a Product's Life Cycle	8. Leaving Smaller Footprints
Middle School								
MS-LS2-4. Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.								X
MS-LS2-2. Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.	X	X					X	X
MS-LS2-5. Evaluate competing design solutions for maintaining biodiversity and ecosystem services.						X		X
MS-ESS3-4. Construct an argument supported by evidence for how increases in human population and per-capital consumption of natural resources impact Earth's systems.		X				X	X	X
MS-ESS3-3. Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.			X	X			X	X
MS-ETS1-1. Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.	X		X	X	X	X		

MS-LS2-3. Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.		X	X					
MS-ESS3-1. Construct a scientific explanation based on evidence for how the uneven distributions of Earth's mineral, energy, and groundwater resources are the result of past and current geoscience processes.		X						
High School								
HS-LS2-7. Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.				X				X
HS-ETS1-1. Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.	X		X		X	X	X	X
HS-ESS3-2. Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios.		X	X	X	X	X		
HS-ESS3-4. Evaluate or refine a technological solution that reduces impacts of human activities on natural systems.				X	X		X	
HS-ESS3-3. Create a computational simulation to illustrate the relationships among management of natural resources, the sustainability of human populations, and biodiversity.				X				
HS-ESS3-1. Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity.				X	X		X	