**HS-ETS1 Engineering Design**

**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.**

Further explanation: Examples of challenges include local and global climate change issues, biodiversity loss or United Nations sustainable development goals.

Asking Questions and Defining Problems, Defining and Delimiting Engineering Problems,

**HS-ETS1-2 Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.**

Further explanation: Examples could include transportation issues, dams, green energy and wind power in Maine.

Constructing Explanations and Designing Solutions, Optimizing the Design Solution,

**HS-ETS1-3 Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts.**

Constructing Explanations and Designing Solutions, Developing Possible Solutions,

Further explanation: Examples could include lobstering and exports of lobster, dry wells and water conservation in Maine, or saltwater intrusion in coastal Maine wells.

**HS-ETS1-4 Use a computer simulation to model the impact of proposed solutions to a complex real-world problem with numerous criteria and constraints on interactions within and between systems relevant to the problem.**

Using Mathematics and Computational Thinking, Developing Possible Solutions, Systems and System Models