

The framework for the project incorporates the ambitions of moving Connecticut toward a cheaper, cleaner and more reliable energy future and at the same time creating economic growth. The project defines these ambitions as follows:

Cheaper

A fuel source is considered cheaper for the customer when the levelized costs of energy (LCOE) of the technology are lower than the LCOE of the alternative that would otherwise have been preferred. LCOE represents the per-kilowatt-hour cost (in real dollars) of building and operating an energy technology over an assumed financial life and duty cycle. Key inputs to calculate LCOE include capital costs, fuel costs, fixed and variable operations and maintenance (O&M) costs, financing costs, and an assumed utilization rate for each energy technology.¹

Cleaner

A technology is considered cleaner when it has lower operating emissions of greenhouse gases (GHG) and particulates than the alternative technology that would otherwise have been preferred by the customer.

This definition does not cover all sustainability issues related to RTTs. Implications of this definition include:

- Changes in GHG emissions due to changes in land use are covered by the definition.
- Biodiversity issues related to biomass are not covered by the definition.
- Upstream emissions related to producing the technologies or fuels are not covered by the definition (Life Cycle Analysis of the technology in question).
- Water quality issues related to open-loop geothermal installations are not covered.
- The definition does not rank the renewable thermal technologies or alternative uses of renewable energy sources (e.g., transportation) by degree of “cleanness.”

More reliable

A reliable energy system has enough energy to cover basic end uses at a reasonable cost at all times, and is robust in the face of short- and long-term changes in any individual energy source. A reliable energy system is based on several energy sources that interact and complement each other. The reliability issues of the energy system involve three concerns: 1) having enough real-time capacity in generation and grid (Joules/h), 2) having access to enough energy (Joules) and 3) being robust to short time variations.

¹ https://www.eia.gov/forecasts/aeo/electricity_generation.cfm

Economic growth

The investment and deployment of RTTs create direct, indirect, and induced jobs. Direct economic benefits come from effects created by an investment in clean energy resources (e.g., income of local contractor, sales of equipment, etc.). Indirect economic benefits result from changing demands that help produce clean energy technologies (e.g., income of supplier companies, sales of materials for the equipment, etc.). Induced economic benefits occur when the income generated from direct and indirect effects is reinvested in the local economy (e.g., sales of groceries where the contractors live). The number of direct, indirect, and induced jobs created through the deployment of clean energy in Connecticut is estimated based on prior research and a methodology approved by the Department of Economic and Community Development.²

² http://ctcleanenergy.com/Portals/0/board-materials/4_DECD%20Findings_Economic%20Development%20Estimates_FY%202013%20Results_CEFIA_121613.pdf