Clean technology (cleantech), defined as products and services that improve productivity and efficiency while reducing waste, energy consumption, or pollution, represents an important lever for sustainable development and climate change mitigation. Beyond ecological benefits, cleantech can be a catalyst for new clusters of innovation, economic development, employment, and the revitalization of cities. Cleantech covers a range of sub-sectors, including energy, transportation, the environment, manufacturing, agriculture, and waste, which frequently have different technologies and business models. Moreover, establishing successful cleantech ventures is highly complex due to rapidly changing technologies, high capital intensity coupled with a need for rapid scalability and commercialization, the number and diversity of stakeholders, widespread requirement of expertise, geographical embeddedness, and non-traditional social-benefit objectives. Over the past decade, cleantech research has gained a foothold in several disciplines, but research is nascent. Our review of 32 articles shows research has focused on early stage challenges of cleantech primarily within North America and Western Europe. This is problematic because the challenges associated with cleantech require new approaches and knowledge, but the research community currently lacks an integrated framework to guide its efforts. Thus, we propose a multi-disciplinary and multi-level research agenda that spans the lifecycle of cleantech ventures from ideation, through commercialization and adoption, to ongoing operations. Within each stage, there are unique challenges with respect to the particular technology artifact, the organization, and the inter-organizational networks and industry as a whole. We suggest new sources of data coupled with advanced information technologies (IT) can provide capabilities to alleviate these challenges. For example, artificial intelligence can be incorporated within renewable energy systems to improve efficiency; Internet platforms can offer cleantech ventures new financing solutions; and IT can be used to manage essential domain knowledge and inter-organizational collaborations. This paper’s main contribution of a comprehensive, theoretically-informed research agenda will serve to align research activities with solving important real-world problems to ensure the most critical questions are addressed quickly. For practitioners, the paper provides a framework and knowledge base for fact-based policy-making and managerial decision-making related to cleantech, thus allowing greater progress toward addressing climate change and other sustainable development priorities.