

An Energy Systems Perspective on Sustainability and the “Prosperous Way Down”

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Energy Systems Theory provides a theoretical context for understanding, evaluating and interpreting shared social visions like “Growth”, “Sustainability” and “The Prosperous Way Down”. A social vision becomes dominant within society when a sufficient number of people recognize that their system resides in a particular stage of the pulsing cycle of change that is ubiquitous in the universe of natural phenomena. This pulsing cycle of change has been recognized and explained by Holling and Odum and it traces a path from an initial low-energy state through growth or exploitation, to climax or conservation and then through decline to the next low-energy period of renewal. The cycle of change is the mathematical result of a production, consumption, recycle model. The external forcing functions of this model and its internal resource storages determine the timing of the various stages. Strategies that are appropriate for maximizing empower in the system network are different for each stage in the cycle. Therefore, the time of transition between stages can be particularly difficult, because the strategies that ensured success in the prior stage have been reinforced and they must be modified or discarded to optimize performance in the next stage of the cycle. The human trait of foresight applied in the higher energy stages of the cycle is critical to ensuring well-being and indeed survival in coming lower energy stages. The present position of world systems in the cycle of change is considered and the applicability of strategic models of “Growth”, “Sustainability” and “The Prosperous Way Down” are compared to the present state of global systems.

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