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DISCUSSIONS ABOUT ENERGY AND OUR FUTURE

Renewables Transition 3: The Precautionary Principle

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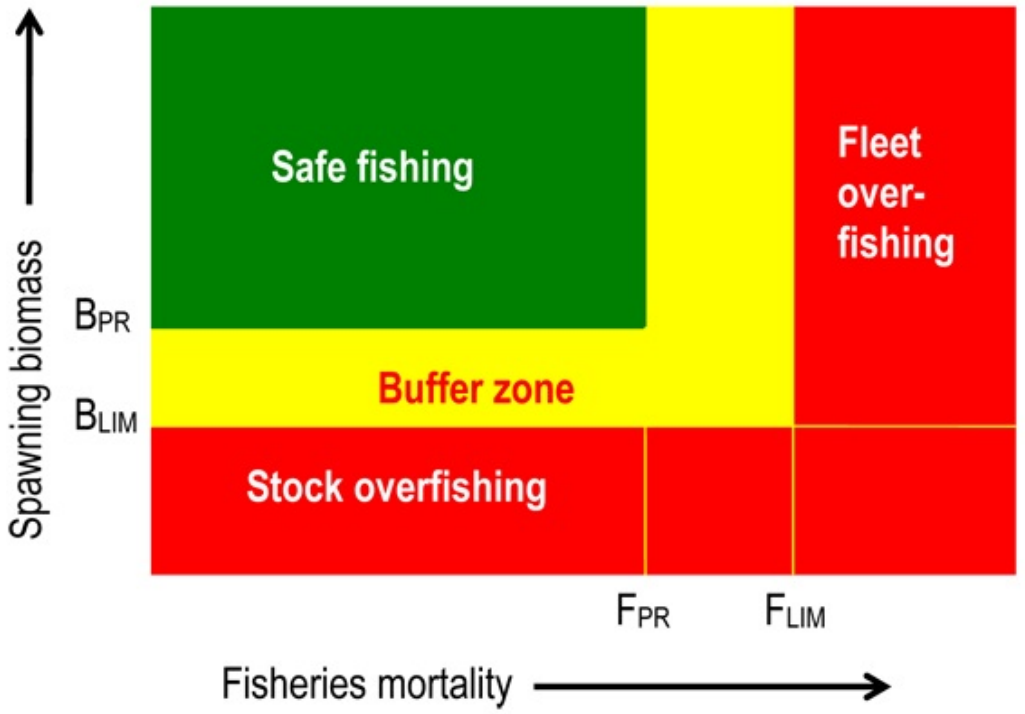
In the first two posts in this series (1 and 2), I discussed the requirements and challenges of transitioning our global economy to renewable sources of energy. My interim conclusion was that there are serious doubts about our ability to affect any significant transition from fossil fuels to renewable energy. Much of this uncertainty is the result of uncertain systemic energy return on energy invested. In other words, when all inputs are taken into account—as must be done where we're talking about shifting energy sources on a civilizational level—can a world powered by solar and wind power itself the way it has on oil, gas, and coal?

The key take away is precisely this uncertainty: we simply don't know if renewables—either current or potential future technology—will be up for the job. Where does that leave us? This discussion—and many others related to Peak Oil—is really a matter of what is known as the "Precautionary Principle," or what degree of consensus is required before we embark on a course of action that may result in irreversible harm. Because the Precautionary Principle has such broad application in discussions of Peak Oil, I've modeled this post as a discussion of the principle itself, using the issue of renewables transition as but one example of its application.

What is the Precautionary Principle? The simple definition states that if an action or policy might cause severe or irreversible harm to the public or to the environment, in the absence of a scientific consensus that harm would not ensue, the burden of proof falls on those who would advocate taking the action

While the Precautionary Principle is traditionally framed in terms of proactive but unacceptably risky decisions, it can also be expressed in the converse as a need to avoid inaction. Principle 15 of the United Nations' Rio Declaration states that "[i]n order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."

Likewise, the Precautionary Principle has a long history of application in resource management areas such as forestry, endangered species, or global warming. See, for example, this graph on fisheries management:



However, in these classic resource management examples, there is not a strong underlying trend as we see in fossil fuel depletion and energy descent. If you don't think that fossil fuel sources are finite and will eventually decline, then this article isn't for you. However, if you accept that we will see a decline in production in fossil sources of energy, then you recognize that our current situation is not like that of a forest or fishery—while reducing consumption will change the pace of decline, it will not suddenly make the resource self-sustaining. As a result, we cannot simply proceed with less of business-as-usual. Instead, it seems axiomatic that our civilization must either 1) accept continually declining access to energy, and/or 2) develop renewable sources of energy to compensate for the decline in fossil fuel production. Unfortunately, that choice isn't especially helpful, as we'll likely all agree that we must 1) accept some smaller degree of energy AND 2) develop renewable sources of energy. The dilemma facing society, in my opinion (and as I raised in the first two parts of this series) is whether it is wise to spend our limited remaining endowment of surplus fossil energy in an effort to jump-start a large enough renewable energy program to essentially maintain business as ususal (e.g. current economic, political, and social structures), or whether that energy would be better spent preparing in mitigation of an accepted and much deeper process of energy descent?

If we're really talking about making societal decisions among various mitigation options—not the simple dichotomy of act with great risk or don't act at all and maintain the status quo—then how does the Precautionary Principle apply to deciding between several risky alternatives? There seems to be an argument leveraging the Precautionary Principle in both directions: one can argue that if we spend our remaining surplus energy seeking to maintain business as usual through massive investment in wind and solar power, and then those investments don't produce enough surplus energy to perpetuate themselves, then we will fall off an energy cliff far worse than if we had consciously powered-down; conversely, one can argue that there is huge societal risk in not pursuing a solution (mass renewables investment) that could stave off disaster, and that "managed" energy descent will itself be an unmitigated disaster—it's really only akin to asking if you'd rather kill three or your four children (managed descent), or all four (unmanaged). Which course of action actually best addresses extreme risk amidst uncertainty—the fundamental purpose of the Precautionary Principle?

Conclusion: we have a limited remaining endowment of surplus energy, and a limited amount of time, with which to prepare our society for energy descent. There are many proposed alternative courses (including staying our current course), often infused with selfish interest, and all (at least if we're honest) including significant degrees of uncertainty. In the first two posts in this series, I tried to raise substantial uncertainty that a massive investment in wind and solar power will succeed in allowing us to continue with societal business as usual. You may or may not have been convinced by my critique--and I want to point out that I don't claim that I presented a definitive proof. For the purposes of *this* post, however, I submit that I have at least raised significant uncertainty about the viability of continuing business as usual through massive investment in renewables. Without necessarily accepting my arguments writ large, if you accept that there is *any* uncertainty in this regard, then where to?

Questions for discussion:

1. Does the traditional version of the Precautionary Principle provide a guide for our decision-making?
2. If not, **accepting the uncertainty in ALL potential options**, what framework for decision-making should guide society?
3. How does this (or any) framework maintain its integrity amidst the self-interested (and short-sighted) influences that will continue to skew any such analysis?
4. Is there any validity in a solution that may perpetuate business as usual without also addressing the structural growth imperative of our current system?
5. How do we ensure that the needs and desires of future generations are adequately represented in this debate? To what extent are we morally obligated to do so? Do we need to consider only the future generations that will come to exist under a model of declining population, or is there some obligation to consider those future generations that could come to exist under a theorized continuation of business as usual?