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Designs for Action: Energy, Climate, Cooperation, and Integral Ecology

Lampen Lecture at Ancilla College
Center at Donaldson
Poor Handmaids for Jesus Christ
Donaldson, Indiana

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Note: Portions of this lecture are taken from an AIRE working paper.[1]

[1] See http://aire-nc.org/2019/01/24/new-aire-working-paper-on-energy-transition/.

Thanks yous and acknowledgements

First of all, thank you to the provincial leadership not only for inspiring us but especially for doing it with your actions. I love the quote attributed to St. Francis of Assisi which is “preach always, sometimes use words” and I think the Sisters’ work here embodies that. We knew pretty quickly that the Poor Handmaids for Jesus Christ was a different sort of nonprofit organization than we’d previously worked for and this passage in their mission sums it up for me:

> Resisting our fears, we dare to accept the challenges of the future. We go forward in hope and joy supported by the bond of community and the strength of prayer.[2]

In these times I couldn’t think of a more powerful and compelling mission statement! Thank you once again.

Also, a big thanks to Adam Thada, Director of Ecological Relations, and the rest of the lay team here at the Center at Donaldson. We’ve worked with Adam via long distance now for over a year and it’s fantastic to be here. Finally! Adam’s solar and techno-nerd qualifications are superb and well complimented with his good guy qualities. The ecological mission here couldn’t be in more able hands with Adam. We’re so inspired by all of this group! Thank you for the hard work and willingness to wrap your heads around the challenges of rapid change.

Last but not least, to you, the students who are truly at a crossroads. I have 2 daughters ages 23 and 19 that have taught me so much. They have given me the “sight” that allows me to look beyond myself and into the future through their births, their curiosities, joys and struggles as they’ve grown into amazing young women. That has been something of a primal gift and now I’m obligated to work for their future. I can’t do anything else. They, and all of you, are the reason I do this work. I grieve for you but I also have hope because of you. I believe in you and take comfort in knowing that you see the world with greater clarity and wisdom than the older generations who’ve failed you. You are so advanced, possessing a deep intuition or what the Scottish scholar Alistair McIntosh calls “sight”, yet you may not be fully conscious of your gift.

Even though we’re the speakers, I humbly submit that we’re actually here to honor the truly amazing work that you have done. In a sense, you all are the experts insomuch as anyone is an “expert.” I like to think of what you have accomplished so far is the result of “cooperation” or collective expertise. That’s the kind of culture we need to foster in these challenging times. We’re so fortunate to have been a part of this ongoing cooperation to bring solar power to the

[2] https://www.poorhandmaids.org/index.php/who-we-are/our-mission

institutions at the Center at Donaldson. It's a work in progress that is already revealing in powerful and visceral ways how we might go about changing the way we produce and consume energy. So, on to energy.

Energy in context

Our primary topic today is energy, just not in an atomized and technocratic way. Of course we could reduce energy to statistics, numbers and charts and we'll do that in a moment, but we're focused on a different context. We'll take a critical look at energy from a broader, more dynamic systems perspective that includes the technical but with social being central.

What is the state of energy here in our part of the world? I suspect that everyone here has some idea about how they'd answer.

- How many of you think about energy?
- Shout out one word that comes to mind when you think of energy…

Okay, a couple propositions before we move on. First, even though we're here to talk energy, why would we put the social at the center and energy itself more peripheral? Because our energy system is is socially constructed, touching on economics, politics, ecology, justice, physics, engineering, and on values and beliefs. This gives us space for our own individual and collective agency as change makers, and that's the "designs for action" part. So our big picture framing of energy is "energy transition," more of a verb than a noun.

Pope Francis spoke critically about the primacy of technology in *On Care for Our Common Home*. For example,

> 111. Ecological culture cannot be reduced to a series of urgent and partial responses to the immediate problems of pollution, environmental decay and the depletion of natural resources. There needs to be a distinctive way of looking at things... which together generate resistance to the assault of the technocratic paradigm ...*To seek only a technical remedy to each environmental problem which comes up is to separate what is in reality interconnected and to mask the true and deepest problems of the global system.*[3] (my emphasis)

Secondly, energy is certainly very complex, but at the same time simple. That may seem dialectical or contradictory. Certainly there are detail complexities like the workings of nuclear power or a solar panel for example. Most energy policies and regulations are also rife with detail complexity. But the energy system itself is complex in a different way, let's call that "system

[3] Encyclical Letter. Laudato Si' of the Holy Father Francis. On Care For Our Common Home.

complexity" because there are so many variables together in action. I think we'd all agree that the system has to change, thus, conversely, its simple because we have no viable alternative but to change it, to reduce our carbon footprint…rapidly not incrementally.

Design designs

Affirming the complex nature of systems, the anthropologist Arturo Escobar[4] says, paraphrasing, "design designs" (we design and design designs us back).[5] So let's consider a few examples of this with the energy system:

1. burned millions of years of fossil carbon in a little more than 100 years and called it progress.
2. the Roman Empire burned all the wood in Europe prior to the coal benge...thus running out of "fuel" and we know what happened to the Roman Empire.
3. atmospheric conditions (400+ppm) are wildly beyond natural variability (Slide: Mann's hockey stick)
4. economic system dependent on fossil fuel, yet hasn't done the basic accounting (desecrated landscapes, atmosphere and people... economists have a fancy term for this- "externality")
5. The great regionalist Lewis Mumford named this carboniferous capitalism a century ago, exposing the system's core identity.[6] Mumford recognized the merger of "science, capitalism, and carbon power" for the purposes of "fulfilling an underlying imperative of ceaseless growth."
6. Taught us to see nature as a "resource" to be exploited for profit. (Slide: my econ textbook)
7. Allowed investor-owned utilities (IOUs) to spend YOUR money lobbying and doing sophisticated PR to trick you into false beliefs to sustain its profits and power. (Slide: Duke Energy lobbying)
8. supercharged storms, floods, wildfires (no imagery required)
9. Imbedded paradoxical ideas like "the greening of war" into public lexicon and consciousness (solar powered army bases and warmaking; renewable energy colonialism).

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[4] Arturo Escobar, Designs for the Pluriverse: Radical Interdependence, Autonomy, and the Making of Worlds. Duke University Press. 2017.

[5] For a very brief commentary and introduction to 'Pluriverse' see http://aire-nc.org/2018/09/26/making-community-energy-together-in-the-pluriverse-thoughts-on-an-important-new-book/.

[6] Lewis Mumford. *Technics and Civilization*. 1934. p. 151-211. Cited in John Byrne, Noah Toly and Young-Doo Wang. 2006. Introduction: Modern Energy and Modern Society. In *Transforming Power: Energy, Environment, and Society in Conflict*, edited by J. Byrne, N. Toly and L. Glover. New Brunswick, NJ: Transaction Publishers. p.ix..

10. Brought forth dark ideologies that are coming to be called “climate apartied” and one needn’t look further than the Bahamas or Puerto Rico.

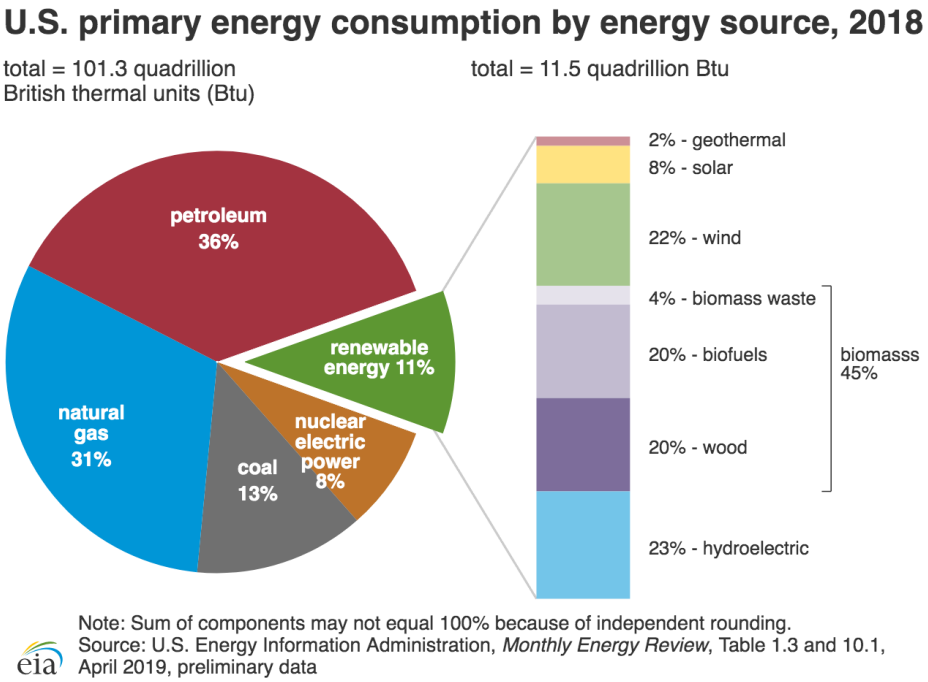
I could go on, but you get the picture. This might well be seen as a tick list for what Pope Francis called “The Crisis and Effects of Modern Anthropocentrism.” Surely this isn’t a world that any of us would wish for, but... design designs.

Current energy picture

Let’s step away from the anthropology of energy for a moment and take a snapshot of energy.

Energy Pie

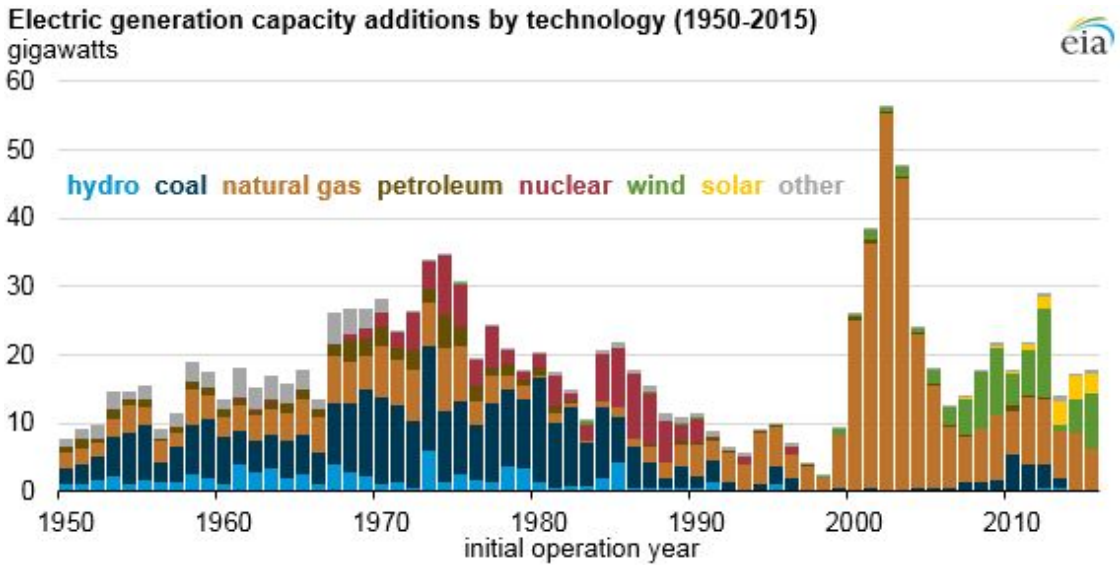
Overall, renewables are a small proportion of total energy mix. Additionally, solar, wind and geothermal are the important ones since, for example, much of biomass is controversial and unsustainable. When we talk about 100% renewables, you can see we have a ways to go and in a short period of time. Here’s our overall energy mix from various generation sources:



Fracking Problem

Fracked natural gas is a big problem, with its significant well-head methane leaks, insufficient capping of depleted wells including public bailout of bankrupt fracking operations. With the

advent of the so-called technology of fracking in the early 2000's you can see the spike, which has caused havoc in many communities and global climate.[7]



Price is Right

Maybe the most positive indicator of growth is that the cost of solar has come down.[8] Here is the U.S. Solar Photovoltaic System Cost Benchmark: Q1 2018[9]

[7] For more, see http://aire-nc.org/2019/01/07/connecting-the-dots-cheap-fracked-gas-isnt-cheap-the-public-pays/

[8] AIRE's first project cost $8/watt excluding labor (see http://aire-nc.org/2019/01/22/community-solar-obstacles-and-opportunities/). Your project that we celebrated at the ribbon cutting today was less than $1.70 per watt including labor.

[9] U.S. Solar Photovoltaic System Cost Benchmark: Q1 2018 https://www.nrel.gov/docs/fy19osti/72399.pdf

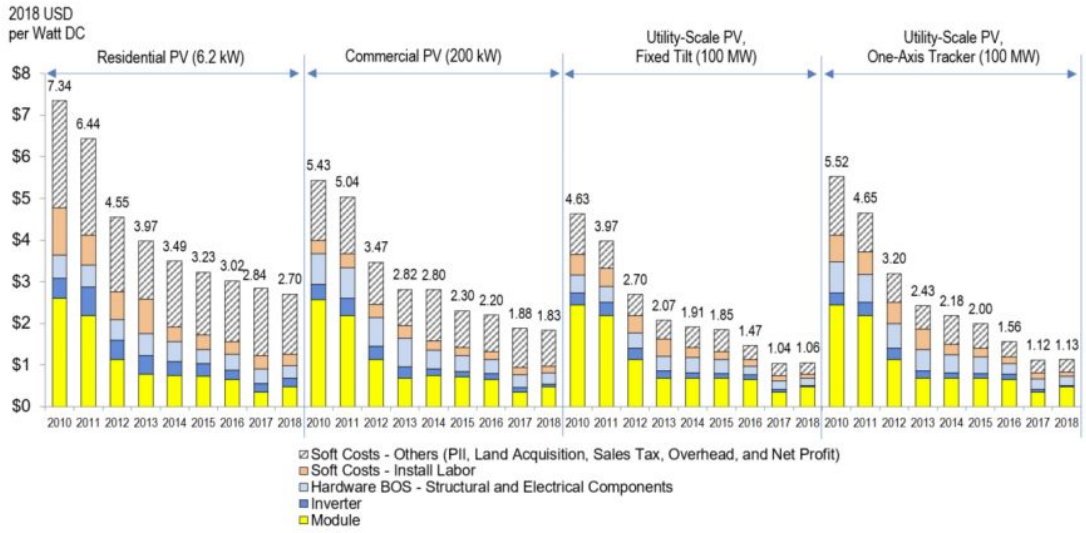


Figure ES-1. NREL PV system cost benchmark summary (inflation adjusted), 2010–2018

One area within the cost column we pay attention to is labor, since livelihoods are important to communities and families.

Discussion

Renewables are not yet the disruptive, transformational force we desire. Renewables are growing, but the optimism should be put into context:

> Relative changes within the overall energy mix should not be confused with changes in the overall levels of production and consumption of any given form of energy. By focusing only on the levels of growth achieved in deployment of renewable energy in recent years, outside the context of the broader growth in overall energy demand and consumption during that same period, we risk drawing conclusions that are completely out of touch with reality.[10]

How can the above statement be defended? What about new demand for electricity? What purpose does it serve? One of the more interesting turns in energy in “modern” life is the use of bitcoin as an investment and payment cryptocurrency.[11] Although I suspect many of us know only generally what bitcoin is, it does merit some attention for its potential for radically increasing global warming. A recent study published in the journal Nature Climate Change claims that if bitcoin continues its present adoption path, it alone, because of its massive

[10] Sean Sweeney and John Treet. Energy Transition: Are We Winning? Trade Unions for Energy Democracy. Trade Unions for Energy Democracy. January 2017. p.13.

[11] Nathan Schneider calls bitcoin an experiment in anthropology as much as one in cryptography, and gives an interesting journalistic account in *Everything for Everyone: The Radical Transition that is Shaping the Next Economy*. Nation Books. 2018. p.101-132.

electricity consuming computing needs, would produce enough CO2 emissions to push the planet over the 2 degree C threshold in less than three decades.[12] Add to this, video gaming, the expansion in server farms, the greater need for air conditioning in a warming climate, electric vehicles and so many other new demands for electricity beg the question, if we are to power these things and achieve energy equity, how would we do it and stay under 1.5°C or 2°C limits, and what are the societal values of these new electric demands?[13] In other words, can we keep increasing consumption? We must fundamentally evaluate the growth in renewables relative to overall energy demand.

Finally, the investor-owned utilities have admitted they will concede nothing. Its trade association, Edison Electric Institute, published a report in January 2013 entitled *Disruptive Challenges: Financial Implications and Strategic Responses to a Changing Retail Electric Business*. This report detailed threats to its profitability posed by "distributed energy resources." It called this "a near-term, must consider action by all policy setting industry stakeholders."[14]

Energy Transition

So if we agree that energy has brought us to a crossroads, what does the path forward look like? You are fortunate here at Ancilla College to have a new working model of it. Design designs. Here we are again, this time for the better. The energy snapshot we've described was designed a long time ago, reproduced its power for decades, and its consequences are baked into the climate system we now have to overcome.

Fortunately, new designs are emerging. What are they? In rethinking energy, some critical guiding questions should include:

- energy generated proximate to demand [centralized or distributed generation]
- what kind of generation sources [fossil fuel, nuclear, or renewables]
- who owns &/or benefits from energy generation [investor-owned utilities or cooperative/community/public ownership]
- energy for what (e.g. bitcoin, "green warfare" or people's needs in a community),
- what does ownership, governance, culture, and structure look like
- In short, how do institutions, communities, and more broadly, the commons work out the relations of energy production and consumption?

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[12] Mora Camilo, etal. Bitcoin emissions alone could push global warming above 2°C. Nature Climate Change. October 29, 2018. p.931-933.
[13] I must add that some scientists estimate that we already have a near-zero probability of staying under 1.5C and an only slightly better chance of staying under 2C.
[14] Edison Electric Institute. *Disruptive Challenges: Financial Implications and Strategic Responses to a Changing Retail Electric Business*. January 2013. P.2.

Just a few quick comments on these bulleted questions. What you see stemming from the questions is an energy typology. On a purely business case, given that renewable sources like solar have near zero marginal cost, centralized generation cannot complete given it's transmission cost. Again, the IOU's see this as a clear and fundamental threat to their monopoly business model. This explains why they have spent so much money to control state governments, public utilities commissions and public opinion.

There is a growing sensibility which says that energy is a public good and therefore not the domain of profit. Consider this: Duke Energy[15] made a profit of $4,203 million in 2017. The company also received a $247 million tax rebate in the same year, meaning that its tax rate was minus 5.9 percent.[16] Notice that is *minus* 5.9%. One single year is no anomaly. In fact, Duke paid no taxes and received a tax refund of totaling $370 million from 2013 to 2017, a rate of *minus* 2%. Even farther back, Duke raked in substantial profits and received a tax rebate of $299 million, representing a tax rate of *minus* 3.3%.[17] There are examples of publicly owned nonprofit utilities. Electric cooperatives in rural areas like here in Indiana and where we live in the mountains of North Carolina. But as Nathan Schneider[18] has pointed out, many of them behave more like IOU's than cooperatives.

Municipal utilities and various forms of community-owned renewable energy are viable and are springing up across the country either in actual development or at least in expressed intent. Even on larger scales, socializing utilities is now being openly discussed. I think of California's PG&E in the post-fire bankruptcy and in the U.K.[19]

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[15] I pick on Duke Energy intentionally because it is a big offender and because it is most familiar to me. Rest assured, Duke is in good (bad) company on this list of offenders.

[16] *Fifteen (of Many) Reasons We Need Real Corporate Tax Reform*. Institution on Taxation and Economic Policy. April 11, 2018. https://itep.org/fifteen-of-many-reasons-we-need-real-corporate-tax-reform/ (viewed on 11-27-18).

[17] Rob Schofield. Profiles in corporate tax avoidance: Duke Energy. NC Policy Watch. http://www.ncpolicywatch.com/2013/04/10/profiles-in-corporate-tax-avoidance-duke-energy/ . 4-10-13. (viewed on 11-29-18).

[18] Nathan Schneider. *Everything for Everyone: The Radical Transition that is Shaping the Next Economy*. Nation Books. 2018.

[19] In the midst of Brexit turmoil, there has been talk of socializing energy systems. See *Public ownership of the UK energy system- benefits, costs and processes*, a 2016 report published by Public Services International Research Unit at University of Greenwich and prepared by David Hall, a visiting professor Faculty of Business. http://www.psiru.org/sites/default/files/2016-04-E-UK-public.pdf. (accessed 11-30-18). Also, *What If We Just Buy Off Big Fossil Fuel: A Plan to Mitigate the Climate Calamity*. Steve Hendricks. Counterpunch.

Opposing fossil fuel should not mean uncritically accepting corporate renewable energy.[20] Kate Aronoff, in a 2016 Dissent magazine article, daring to imagine a wider landscape of possibilities, asks the essential question:

> What other possibilities are there? Beyond Big Solar are a range of ownership and profit structures that complicate the renewables landscape, and could ensure that an economy powered by something other than fossil fuels will be more equitable and democratic than today's. Energy cooperatives and publicly owned utilities are two promising models that allow for stripping dirty energy from our power grids without doubling down on profit-hungary development. The alternative to a corporate-controlled fuel transition is simple: socialize America's energy economy.[21]

Socializing America's energy is a strategy that is perhaps capable of confronting the emergency facing human civilization. It finds leverage at the core of the problem in that it:

> ...opposes the idea that the commodification of nature is key to solving the profound ecological crisis we face as a species. It regards the idea of putting a price on 'natural resources' in order to make capitalism green and sustainable as plainly false and deeply perverse.[22]

The significance of Sweeney's public ownership argument is that it challenges the dominant market-based ideology and its propensity for "green-washing of existing capitalist structures rather than addressing the real causes of the multiple crises."[23] Also, it aims directly at resurrecting the dispossessed public sphere and situating energy and livelihoods as societal goods.

So much has been made of Si' Laudo (at least in some circles) that one might label Pope Francis' commons and cooperative thoughts new and radical. However, Nathan Schneider points out that cooperation, defined as "the proper human posture toward God and creation" is a century-old feature of Catholic social thought.[24] The supporting axioms of this cooperative "posture" as it relates to energy are:

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[20] Sean Sweeney. "Working Toward Energy Democracy." *State of the World 2014*. The Worldwatch Institute. p.219.
[21] Kate Aronoff, "How to Socialize America's Energy." *Dissent*. Spring 2016.
[22] Sean Sweeney. Resist, Reclaim, Restructure: Unions and the struggle for Energy Democracy. October 2012, updated November 2012. p.i.
[23] Ibid. p.3.
[24] See http://aire-nc.org/2019/05/21/energy-cooperation-and-possibilities-nathan-schneiders-take-on-the-popes-climate-encyclical/ ; also see http://aire-nc.org/2018/10/16/cooperation-can-we-reimagine-and-recreate-it-for-energy-for-everyone/.

- distributed ownership (for us the essence of “community-owned renewable energy”)
- people over profit (again, for us, the goal of it)

And again, look at what you have here at Ancilla College. The solar is pretty obvious but you also have the integration of electric vehicles and wind power at Moontree, the latter giving you a platform for more far-reaching imaginations and experiments in energy transition.

Integral ecology & designs for action

Much has been said about Francis’ climate encyclical, and chapter 4 on integral ecology, so I won’t say more. I take a few minutes to draw some parallels with other thinkers. Indeed, others recognize that humans and the natural world are inherently connected. Escobar, for example, talks about relationality as part of a new ontology as opposed to dualisms that define western worldview– man/nature; rich/poor; economy/environment; power/powerlessness; conservative/liberal; individual/society and so forth.

It’s here where social justice and ecology in various manifestations comes in to current energy and society discourses including Just Transition (JT), Green New Deal (GND) and Degrowth to name a few. We don’t have time here to get into these. JT is aimed at caring for displaced workers in energy transitions from oil, gas and coal to renewables. GND is a very comprehensive just and sustainable vision of more global proportions, since the climate emergency knows no national boundaries. Degrowth gets straight at carboniferous capitalism.

In thinking deeply, morally, socially and physically about energy in the context of public good, I’ve found it interesting to reread *Energy and Equity*, Ivan Illich’s 1974 reflection of the oil crisis precipitated by a political conflict involving Israel and an oil embargo imposed by middle eastern oil exporting countries. Although his critique is aimed at the energy consumption of mobility, it is an important text for critical studies of energy in general. His capstone point is:

> The energy crisis cannot be overwhelmed by more energy inputs. It can only be dissolved, along with the illusion that well-being depends on the number of energy slaves a man has at his command. For this purpose, it is necessary to identify the thresholds beyond which power corrupts, and to do so by a political process that associates the community in search for limits.[25]

Illich called for “counterfoil” research, which he defined as research that runs counter to the research of experts for institutions, and instead sought to situate energy within and in service to moral communities.

[25] Ivan Illich. Energy and Equity. Calder & Boyars Ltd. London. 1974. p.22

This research program consists of three steps.

1. Recognize that limits on per capita energy use is a social imperative.
2. Determine where that "critical magnitude" might be found, which I read to mean understanding where, and the processes by which that limit should be established.
3. Every community would decide what trade-off it would accept between "idolizing power devices and joining in rituals directed by the professionals who control their operation."[26]

Conclusion

Eight years ago, the scholars Herbert Reid and Betsy Taylor in *Recovering the Commons: Democracy, Place and Global Justice* suggested that deepening inequality and the myth of progress would lead to at least two possible political formations. "One direction is a right-wing nationalism enforcing new scarcity formulae rationalized by 'patriotic' sacrifice. A second possibility is the democratically chosen politics of limits based on a much more decentralized and sustainable energy system."[27]

The Lampen Lecture's purpose "promoting each individual's ability to think beyond his or her own experiences and interests." The need for this is urgent and we have plenty of historical parallels to draw from. We have to have the sight, and the concepts to comprehend our energy situation.

The sociologist Mike Davis used an old Grand Canyon exploratoration metaphor in his critique of the financial crash of 2008. I want to quote it at some length because surely it applies to the interrelated crises now. Davis writes:

> Let me begin, very obliquely, with the Grand Canyon and *the paradox of trying to see beyond cultural or historical precedent*.
>
> The first European to look into the depths of the great gorge was the conquistador Garcia Lopez de Cardenas in 1540. He was horrified by the sight and quickly retreated from the South Rim. More than three centuries passed before Lieutenant Joseph Christmas Ives of the U.S. Army Corps of Topographical Engineers led the second major expedition to the rim. Like Garcia Lopez, he recorded an "awe that was almost painful to behold." Ives's

[26] Ibid. p.22-23.
[27] Herbert Reid and Betsy Taylor, *Recovering the Commons: Democracy, Place and Global Justice*. 2010. P.52.

> expedition included a well-known German artist, but his sketch of the Canyon was wildly distorted, almost hysterical.
>
> *Neither the conquistadors nor the Army engineers, in other words, could make sense of what they saw; they were simply overwhelmed by unexpected revelation. In a fundamental sense, they were blind because they lacked the concepts necessary to organize a coherent vision of an utterly new landscape.* [28] (my emphasis)

And now to close, I want to go back to the idea of experts as a caution and an invitation for you all to help build the energy future we desire. Since we started this talk by saying that people, not technology, was central to energy transition, if follows that we should also remember that humility is required in the social as well. In this vein, Wendell Berry has written about wisdom, ignorance and the limits of human knowledge, directing a good bit of his reasonable contempt at "experts" of various hues:

> Ignorance, arrogance, narrowness of mind, incomplete knowledge, and counterfeit knowledge are of concern to us because they are dangerous; they cause destruction. When united with great power, they cause great destruction. They have caused far too much destruction already, too often of irreplaceable things. Now, reasonably enough, we are asking if it is possible, if it is even thinkable, that the destruction can be stopped. To some people's surprise, we are again backed up against the fact that knowledge is not in any simple way good. We have often been a destructive species, we are more destructive now than we have ever been, and this, in perfect accordance with ancient warnings, is because our ignorant and arrogant use of knowledge.[29]

And so this is the case with energy. Seeing clearly the unprecedented climate emergency now facing humanity, our Grand Canyon, is our urgent need. And fitting it is that Lampen Lectures would ask us to think beyond our experience. As for seeing beyond our own interest, in the case of climate, it is our collective interest, especially for youth and future generations. Wise implementation of renewable energy technology coupled with a recognition of limits and our interconnectedness to each other and all things, and pursued in cooperative ways is our design challenge now.

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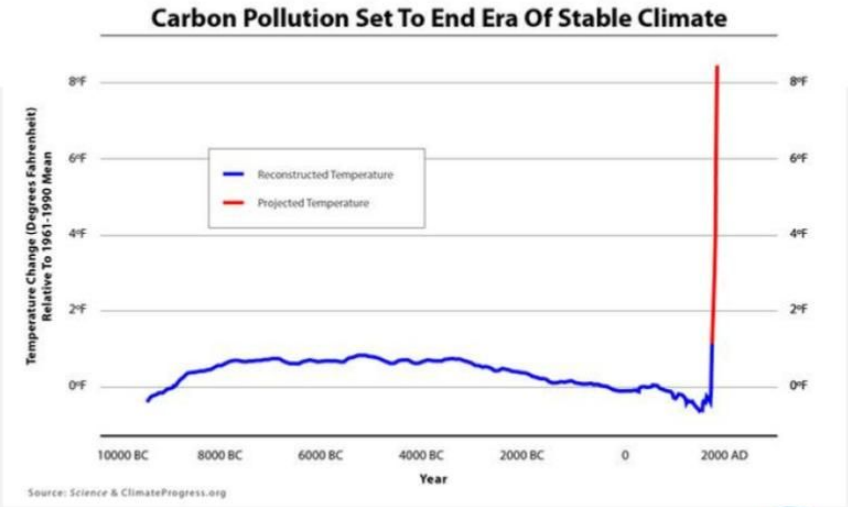
[28] Mike Davis, Can Obama See the Grand Canyon: On Presidential Blindness and Economic Catastrophe. http://www.tomdispatch.com/post/174989/mike_davis_casino_capitalism_obama_and_us

[29] Wendell Berry. "The Way of Ignorance" in *The Way of Ignorance and Other Essays*. Shoemaker & Hoard. 2005. p.59.

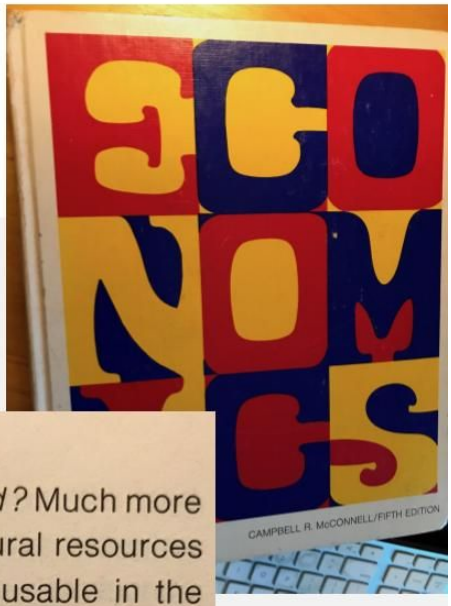
APPENDIX

Slides that accompany the lecture (slides 4, 5 & 6 are in the text above and omitted below):

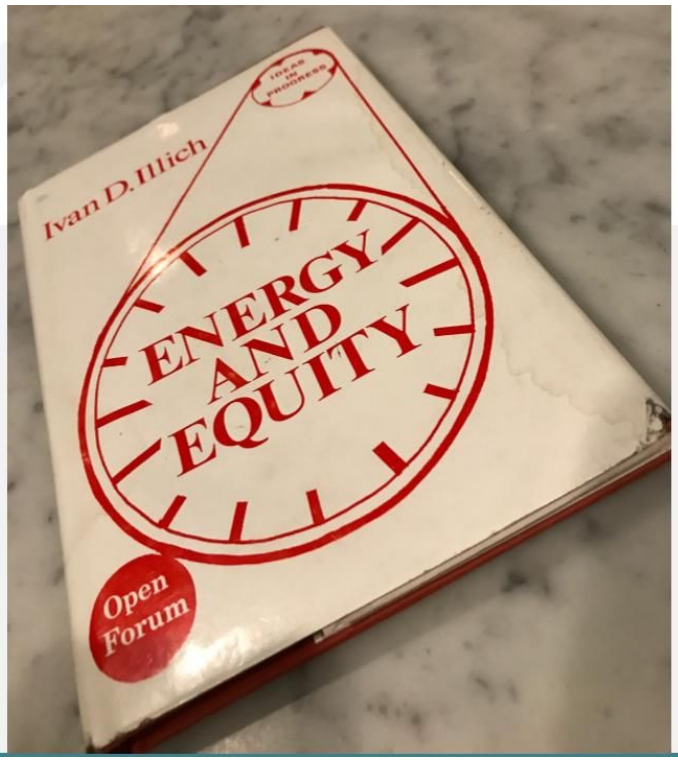
Michael Mann's famous "hockey stick"



Critical Pedagogy Needed! My 1973 Econ!



What does the economist mean by *land?* Much more than the layman. Land refers to all natural resources —all ''free gifts of nature'' which are usable in the productive process. Such resources as arable land, forests, mineral and oil deposits, and water resources come under this general classification. What about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FÖR
KLIMATET