

13:40:48 From David Pollock to Everyone:

Q: I understand technologies improve and costs come down, but when I consider air CO₂ capture technology it seems a long way off to do anything close to being useful in our CO₂ reduction battle, and the number of machines and investment required to prop up fossil fuel seems like only a drop in the bucket, yet it is the major government solution. Your thoughts?

13:45:27 From David Pollock to Everyone:

C: In the renewable energy sector, a *dunkelflaute* is a period of time in which little or no energy can be generated with wind and solar power because there is neither wind nor sunlight at a particular location.

13:51:07 From John Meyer to Everyone:

C: We need to have biophysical metrics to work through the full cycle costs of any proposal and process to separate greenwashing/false-FF-lobby claims and things which actually work. Sorry, I don't have a camera and for some reason my mic doesn't work.

13:56:42 From David Pollock to Everyone:

C: Any numbers, I think, about a population that is sustainable depend on thinking about distribution issues, and carbon footprint and standard of living that one wants for the populace in the context of assumed available technologies and global temperatures.

14:00:34 From Gabriela Gref Innes to Everyone:

C: I do not feel as confident that North America will be in the best place to survive the consequences of CC...unless anything dramatic happens. Russia has a larger space and less population and are controlling the immigration.

14:00:57 From David Pollock to Everyone:

Q: Don't you think that there is a fourth solution that embraces some of your option 3, but also some reversion to using less stuff among the wealthy while striving to improve living standards for the poorer population. So, some simpler living and restoration of nature along with some of your technology solutions?

14:12:41 From Jean & Dave Dougherty to Everyone:

Q: Recently car manufacturers have projected new batteries for 1000 km range. What are the chances that this is going to happen soon?

14:17:55 From John Meyer to Everyone:

C: If oilsands crash, so does the Canadian \$ as oilsands products make up 20+% of Cdn exports. Maybe this is the end of the Dutch disease for Cdn manufacturing.

14:19:41 From Geoff Strong to Everyone:

Q: What is the efficiency of recycling EV (and other) batteries now, and in future?

14:26:40 From John Hollins to Everyone:

Q: It takes time to turn over stocks. How have you taken account of stock turnover in your forecasts?

14:27:41 From John Meyer to Everyone:

C: Solar EROI/payback is highly dependent on latitude. The further north one goes, the lower the capacity factor. Capacity factor in Northern Canada/Europe/Russia might be 25% of that of the US SW. [EROI = Energy return on energy invested. Ed.]

14:34:19 From Geoff Strong to Everyone:

Q: How does the rapid development of renewables and electric vehicles (EVs) affect our rate of technological growth and use of Earth's resources, which many think we need to reduce?

14:35:41 From Art Hunter - CACOR to Everyone:

C: A recent comment I read claimed that EVs are the only tool that is working.

14:36:51 From Geoff Strong to Everyone:

C: Raymond, that was an excellent talk and you should really consider writing this up and publishing.

14:40:50 From Art Hunter - CACOR to Everyone:

C: Just for the record, we have been working on a new mission statement which is now at an advanced state and reads: *To foster humanity's first priority, a sustainable relationship with the natural world by advocating for an end to economic growth as an all-pervasive goal, thereby addressing Climate Change and other challenges facing humanity and the ecological integrity of our planet.*

14:45:35 From John Meyer to Everyone:

C: Not to say I am anti-PV in Canada. My 3rd system has just gone live. Also, heat pumps are salvation for the North, plus geothermal storage. [PV = photovoltaics. Ed.]

14:49:50 From Paul Beckwith to Everyone:

C: You made a statement that "we all know about how bad climate change is..." I argue that this statement is the polar opposite of reality. People have no idea of what climate mayhem we will experience over the next year, two years, five years, ten years. **No idea.**

14:50:08 From Art Hunter - CACOR to Everyone:

Q: Any talk on renewable energy needs to address geothermal as it is not impacted by latitude or longitude. I consider EVs as mobile batteries that can be used in survival mode as part of a microgrid. They have other advantages besides transporting goods and people around. I consider a very large battery as essential for survival within a microgrid not a luxury. Could you comment on EVs as part of a microgrid?

15:01:05 From John Meyer to Everyone:

C: Tesla 2, VW ID2, and other small EVs will make the market real for many people when the price comes in under \$30 k Cdn.

15:10:07 From Mitchell House to Everyone:

C: Nobody knows how bad it is going to get, although everyone should agree that it's not a good outcome for any of us to continue in a business-as-usual approach.

15:10:09 From Geoff Strong to Everyone:

C: Since GHG emissions (CH₄, N₂O, as well as CO₂) are increasing faster than ever, it's hard to agree with Mann suggesting that climate change is not increasing.

15:12:53 From Claude Buettner to Everyone:

C: Paul Beckwith mentioned this report: <https://pure.iiasa.ac.at/id/eprint/19228/>

15:13:44 From Mike Nickerson to Everyone:

C: More Fun, Less Stuff [Also, the thinking that got us into this mess won't get us out of it. Ed.]

15:31:25 From Peter MacKinnon to Everyone:

C: Some estimates are 100 million people in Canada by 2100? Even our former Prime Minister advocates this. We are adding 1 million every 2 years now; 5 million in 10 years, plus births once here.

15:34:18 From Peter MacKinnon to Everyone:

Q: Creating new agricultural quality soil for a changing world will take many decades by natural processes.