AFTER COPENHAGEN: UNDERSTANDING THE POLICY TRAP FOR POLICY MAKERS

Program co-sponsored by NGO Sustainability and the Mission of Slovakia
United Nations, New York, 2 February 2010

Roma Stibravy, Chairperson of NGO Sustainability

Ms. Stibravy opened the conference by noting that China is now the world's largest producer of wind and solar energy. She then spoke about the failure of the Copenhagen summit to reach a legally binding treaty commiting nations to mandatory reductions in greenhouse gases. The Copenhagen Accord was agreed to instead, which President Obama characterized as "an important first step". Subsequently, more than 90 countries, representing 83% of the world's greenhouse gas producers, voluntarily associated themselves with the Accord promising to reduce their emissions.

Milos Koterec, Ambassador of Slovakia

The Ambassador greeted attendees and lauded NGO Sustainability, and Chairperson Roma Stibravy, for being at the forefront of initiating discussions on energy's role in the global economy. In introducing Ambassador Koterec, it was mentioned that before becoming the Permanent Representative of Slovakia to the UN, he was a Member of the European Parliament from 2004 to July 2009. Before then, he served in his country's Mission to the North Atlantic Treaty Organization (NATO). He holds degrees in Engineering, Business Administration, and International Relations.

Mr. Koterec stressed Slovakia's support of the Copenhagen Accord and looked forward forward to the further negotiations scheduled to take place in Mexico later this year.

The Ambassador stressed the importance of engaging in new dialogue. He looked forward to learning from Mr. Martenson's research.

Chris Martenson, Independent Economist, and Founder of Chrismartenson.com

Dr. Martenson opened by pointing out a basic problem underlying the challenges facing the Copenhagen summit. A broadly held view has been that economic growth and reductions of CO2 emissions could be reconciled. In fact, both objectives are on the same side of the equation and locked into a direct relationship: as an economy grows so do CO2 emissions. If the level of CO2 emissions is reduced, economic growth will be constrained.

Dr. Martenson outlined how the macro trends of the economy, the structure of energy input and the environment ("the Three E's") will affect the decisions we make as individuals and policy-makers.

Energy is the essential supporting input of the economy. The environment is, on one hand, an issue of depleting resources. These factors combined with a financial system dependent on continued economic growth will continue to create disastrous friction with the resources and ecosystems of a finite planet: the warning signs are apparent and we must re-appraise our current economic processes.

To achieve solutions of the major questions of our time, we will need to understand how the "Three E's" are inextricably linked, and get rid of the myths we tell ourselves as a society if we are to build a future of sustainable prosperity.

Growth is essential to our economy; it is so important that economists don't even have a word for its opposite, they refer to "negative growth" to describe it. Additionally, we must understand and take into account exponential growth.

The economy is an expression of our monetary system. All money is created through lending with interest. When we lend money e with interest into existence it creates debt. There is always more debt in the system than readily available money (cash) The US currently has $52 trillion credit market debt and only $10 trillion cash. This Means that the system requires perpetual growth for the modern banking system to function. The ratio of debt to GDP globally has increased. In the 1980s, the US saw a doubling of this ratio, which again means that we as a nation were assuming the future would be "larger" economically speaking. Debts are bets on the future; for the econony to function, more economic activity is needed to service the debt, which in turn requires greater energy input.

Given this, our economy MUST grow. We describe the current recession as painful because it produced a -4% in GDP "growth" this year. Our system instead likes exponential growth, growth at a steady percentage over a period of time, such as 3%. The main characteristic of exponential growth is that is starts off slowly, but then speeds up.

In addition to our economy growing exponentially (until this recession), population and energy consumption have also been growing exponentially.

Martenson used the following example to demonstrate the power in exponential growth:

If a person was strapped to the chair of the highest seat at Yankee Stadium, and a drop of water which grew at an exponential rate was placed on the pitcher's mound field, how fast would the stadium fill up (in minutes, days, or months), and more importantly how many minutes would you have to escape? You would have only 49 minutes to escape drowning. He then asked when is the park still 93% empty? It is empty till 44 minutes after the drop was first placed. This means that it only takes an additional five minutes to fill up 93% of the stadium. It is this time running out at the end which can lead to disastrous situations where exponential growth is taking place.

Mr. Martensen discussed the quality of energy resources now being extracted and their depletion rates. The last major oil discovery was in Prudhoe Bay, Alaska. The most recent has been in the Gulf of Mexico, in which the field is located 3 to 4 miles below sea level; this is comparable to the height of Mount Everest. Given that it will be very costly to extract from this field, we need to assess the net energy gain from such a drilling project. Historically, in the oil fields of Texas with oil over spilling from its pumping towers we were able to use one barrel to 100% of its energy capabilities. This 1:100 ratio is now 1:10; projected data indicate the ratio will decrease to 1:3. This means that the return we will get from the energy invested in obtaining energy from new sources will be next to nothing. This is due largely in the fact that finds now consist of heavy tar sands, which aren't comprised of high quality oil. Additionally, its extraction has high costs. He also mentioned that if we would start using corn-based ethanol these ratios would be very different.

This same concept is evident in mineral extraction, like copper. In the past, we were able to extract 10% grade copper and are now only extracting .2% copper. We are searching deep in canyons and using dynamite to destroy mountains to find the last remaining bits. Currently, it takes 500 pounds of ore body removal in order to obtain 1 pound of copper. This exemplifies that with resource extraction as you keep extracting, the quality of product decreases, while costs in extraction increase. Such an energy system cannot meet the needs of an economic system which must perpetually grow.

Without proper energy supply to drive our economy, an economic crisis can transform into a food crisis, which will then become a population crisis. We need to be wary of where we are on the depletion curve. To build this awareness we need to broaden understanding at all levels including, government, corporate, and university. We must focus on understanding the meaning of net energy extraction before we can devise solutions. Next we need to have a vision of where we are going. By following these guidelines, our future can be shaped by design and not disaster. We have reached a threshold where disparities such as political views or age differences no longer apply.

It is now about separating the wrong choices from the right choices. We need to reframe our approach based on fact, and not assumptions. We assumed housing would always increase in price, and we consequently made bad investments. Let us not replicate this for the energy sector, let's get our story right.

Roma's Conclusion

Another conundrum: the US has been chastized for its low savings rate in recent years compared to other countries such as Japan and China. At the same time, the American people are being urged domestically to consume to help the economy grow. How can these two be reconciled?

Questions and Answers

1. In a hypothetical situation, if you were made president tomorrow, and didn't have to get congress's approval for decisions, what would you do?

The first thing I would do is build a national commission that would understand net energy. We don't understand net energy at this point. Yes, there's a few university professors and their graduate students who every so often do the level best to understand what is the energy return is on the energy invested from some type of ethanol plant. But we can't answer the question today, should we spend $8 billion on a high speed rail train or should we spend it on retroactively insulating existing structures. We don't know. I can tell you the dollar cost of that, but we do not know what the net benefit of that is to society, like which one will return the most energy. So I would use this commission to study this completely, so we can answer all questions completely about the activities we want to perform with respect to how much energy will this return, not money. I think if we had that, we would very rapidly be able to prioritize sets of decision we would be able to make around all kinds of investments. Without that information we are flying blind. We are making decisions based on economic numbers with political ramification, all sorts of decisions will come in that are probably a lot less optimal than if we could just understand what the best energy decision would be. By the way the best energy decisions are almost always the best economic decisions. It's magical that way. But we have subsidized and hidden the costs of energy so completely through a variety of things, it's difficult to get a good, accurate picture from our market, from the price signals we are getting from the market, to tell us which one of these is the right thing. So, some are, some tend to be the wrong thing, and because this all tends to happen, that's why this would be the first thing I would do.

2. In the long term, is grown in this exponential basis absolutely necessary for the long term and it doesn't seem it can be sustainable, and can we consider growth without consuming so many resources?

So the question is do we have to grow exponentially and is that sustainable? When I asked my six year old if anything can grow infinitely forever, she said no. So, I think it's easy to understand that nothing can grow exponentially forever. The other question is do we have to grow exponentially? Absolutely not. We can achieve steady economies and very high level of prosperity without growing. So one of the things that I like to talk about is because growth and prosperity have been so long linked, we confuse the two. So we look back at our country here and we can look back at all this wonderful growth and the prosperity we had, and it turns out we can decouple those two things. Growth and prosperity are not necessarily the same thing. So if you take a picture of Quida, Ecuador, you can see an example, there's a lot of growth, but I don't think you would look at it and say that's also prosperity. So, the critical difference is that prosperity and growth feed off of surplus available, surplus energy, surplus money with that we can grow, and we can prosper. But what I really care about is growing in a manner that leaves us more prosperous, not less. I want to create a world worth inheriting and to that we have to be really clever about what kind if growth we are bringing on. There's growth for the sake of growth, that's bringing on covering a lot of ills, and it's usually the default position of our switch, and I want to switch that over. I think we can grow in ways that are not measured in the old way, but we would measure in a way taking into account all the things we hold dear.

3. We always uses the paradigm of fixed variables, we use linear functions to define growth. But the reality is that the variables are many, they're random, and the predictions are always based on what's convenient to us, not what will work for the future. How do we reconcile the two?

I understand the economy pretty well. It has a lot of moving pieces. It is very complex. It has a lot of variables in there. It's incredibly complex to weigh in there and see what's going on. I like to step back different sort of pipe feeding into it. And, that's the energy pipe. If we can just look into the amount of energy looking to an economy, without knowing anything about its policies or economic development stances, I can pretty much tell you if their economy is growing or shrinking. It's very simple: economies that have higher through-flow rates of energy are growing faster than those that don't. So ultimately if we want to understand where an economy is going to go, we could simply ask the question about energy flow.

4. We live in a left/right world right now. How do you get people to see these issues, whether it's understanding net energy, exponential growth, how do you move to policy makers into the right world.

I leave my opinions out of the story. I let the facts tell the story. Here's the real surprising thing: three days ago I was in a meeting in a small town in California, Sanora, where someone had taken my work and shown it to the town. When I showed up they had about 400 people crammed into an opera hall, and they had more turn away. There were people there from town council, state representatives, ranchers, ex-hippies, conservatives, young people, old people. Someone in the audience said this feels like the time three years ago when a fire came into town, and we threw aside our differences to work together, we watered each other's houses, and we cut fire lines together. So, if the story is compelling enough, I think we can see those old divisions happen as if they weren't there. I've seen it happen in my work. And start working with this material, and you will see people out there regardless of their political persuasion, who say "I knew there was something wrong with that story." I'm not telling anyone new, whether they own it intellectually or intuitively. The common feedback I get is, "I knew it."

5. *My concern is with the US dollar if it devalues because of all this printing. How will people pay their taxes?*

Since 1971, all currencies have been floating relative to each other. They are all operating in the same manner, they are all fiat currencies, and printing is done for both political and economic needs. If a currency was to collapse, we would have to ask against what and that's a harder question to as. Ultimately, I believe we're in a period of time where if the resource story I have told is right, then we will be out of habit continually increasing our monetary supply. We think we can control the economy through the flow of money, but we'll see that won't work for too long. It's very hard to figure out how the collapse of a currency will affect the life of a person who lives locally, but consumes globally. Like the US imports its oil and foods, this is a question that is very difficult to answer.

6. What about renewable energy? Aren't they a net gain in energy? Does this your model take that into account? The whole world is betting on renewables.

Let's just use the microcosm of the US, we import 15 billion barrels of oil everyday. That would equal 750 additional nuclear plants, and only 440 exist today. We don't even have enough uranium to sustain the existing ones. If we are going to make that same calculation with renewable energy, the US would have to increase its total supply of wind and solar energy by 2000, in order to equal the energy in the oil we

import. It's a huge task to undertake, but first I would want to know how much it will cost and how much time it will take. Renewable energies will help propel us from point a to b, but it will not make up for our current consumption rate and then an additional 3% every year. There are things we should be doing already, like having solar for hot water. We should be spending our money on that y putting panels on all roofs.

7. There is another E, employment. It uses all the other E's. The construction industry is the only sector which makes total use of unskilled labor. Is there a way to determine the housing industry's effect on your model?

The way we organize ourselves is through the economy. If peak oil starts to creep sooner than we think, then many years will feel like 2009. In the Great Depression, people wanted to work and we had resources, but it was our money system which fell apart. People can decide to do whatever they want, they can get together and build whatever they want, but if the economy isn't in place, it won't get done. We are lacking the political will and the vision to achieve those things.

8. In 1985, we started our economic bubble in debt and in the stock market. Do you believe in the coming weeks they will go down together?

I personally am not holding long term stocks, because there is a higher chance they will go down rather than up. But I don't think we have seen the other shoe drop on this. Here is my summary of the entire economic crisis in America in 10 seconds: We have a fundamentally insolvent government borrowing money from an insolvent financial system in order to bail out insolvent financial institutions in the hope that they'll pay back enough money to make this work. Just trust yourself, if the story doesn't make sense, it probably doesn't.

9. Edward Wilson has said we are entering the 21st century with reptilian emotion. Is there a way to fight our biology to change our ways?

You need to understand how humans operate. I view humans as an organism. Humans are never going to stop competing, it's in our nature. So how can we include competition in our economies that leads us in the right direction, and not the wrong one. Any solution we implement must take into account the way we function. Edward Wilson studied a lot from studying the behavior of ants, he's a brilliant man. One of the stories I talk about is GDP, when GDP is up it means things are good, but that's too simple of a story. We need to understand where we're going and then figure it out how we will get there. The how will take into account rewards and punishments.

10. We are following countries that also have large coal deposits. What's your response to these countries who look at these reserves as a trump card and will use this as a resource wars?

Resource wars are historically the oldest reason for war, and I want to avoid that. Countries that are playing this card right now, China, being chief, just Google China and any resource, land or coal, you will get pages of hits. China has been aggressively and openly purchasing all the available resources for the past few tears, like coal from Australia, oil and mineral rights from Canada, but they are doing with a mercantilist program. China is clearly in a race. They are racing down the track, and most countries don't even have their shoes tied. If I was in the position of power, I too would follow China's path. So, it looks to me that this will be a story that dominates politically and economy. It will take a lot work to shift old power structures. It's a story worth tracking.

11. Are their local policies that local governments can take to alleviate the situation?

We should take efforts at all efforts, local, national, globally. We can't wait for a top/down situation. I have changed my lifestyle based on the information presented. We need to become the change we wish to see. Before I came into interaction with this information, I used to be an executive in a Fortune 500 company, SISC, and lived on the shore of Connecticut, and used to own a 5 bedroom house, and a twin engine fishing boat. After this story, I am living in a house less than half the size. And I quit the other job to pursue telling this story, and now I have a kayak with twin paddles. My wife and I have thought about we can become more resilient. Resilience means having many different sources of energy, not just one. We are already off the cliff, now the question is how do we land? It's taking this into account that we can change our daily habits to prepare for a stronger future.

<u>*Roma Stibravy's Conclusion*</u>

All good things must come to an end. We are left with a lot to think about, in particular we refer to the Copenhagen accord and we have to keep countries to their pledges, so we can be an influence in our own government and globally. Seeing how this accord works out, this is about our future in climate change. In terms of what Chris has advised, he is saying we have to consider changes in lifestyles. I think we all have without some of us realizing it, just the whole recycling that we go through, we are learning to live as well and a high quality of standard of living with less, and how would we do that is our big challenge. But it is possible. There is technology and different ways of using things that we use normally. So quoting Chris,"We have to get our story out" and we have to be influential in our community with our neighbors and friends. We have a big job ahead of ourselves if we want a sustainable future, which is

what the Brooklyn Commission report was all about in 1986, how to use the resources we have so we do not destroy them for the future generations. It all comes down to something we have been talking about all along.

From Left to Right: Christopher Martenson, Roma Stibravy, Ambassador Milos Koterec