

## Panel 2 Discussion

*These are edited excerpts from the discussion that followed the second panel, “Energy, World Health and the End of War: The Power of Energy Flux Density,” of the July 24, 2021 Schiller Institute conference, “There Is No ‘Climate Emergency’—Apply the Science and Economics of Development To Stop Blackouts and Death.” Excerpted here are four panelists, whose presentations do not appear in this issue: Helga Zepp-LaRouche (Germany), founder and President of the Schiller Institute, whose keynote presentation, “Time to Dump the Learning-Resistant Establishment: Start the Adult Age of Man!” was [published](#) in EIR Vol. 48, No. 30, July 30, 2021; Dr. Kelvin Kemm (South Africa), former Chairman of the South African Nuclear Energy Corporation, who spoke on “The Necessity of Nuclear Power for Africa”; Dr. Vincenzo Romanello (Italy), nuclear engineer, Research Center Rez, and founder in the Czech Republic of Atoms for Peace, whose topic was, “Building a Nuclear Platform for the World”; and John Shanahan (USA), civil engineer, editor of [allaboutenergy.net](#), who titled his presentation, “Stand Up for the Truth: Fossil Fuels Are Good, Nuclear Energy Is Good, Progress Is Good.”*

*Commentators were Maj. Gen. (ret.) Peter Clegg, U.S. Army, and Col. (ret.) Walter Faggett, M.D. (U.S. Army). Dennis Speed, Schiller Institute, was the moderator.*

**Richard McPherson:** Alberto Vizcarra talked about Mexico and about bringing water from up north. In 2004, I was invited to Sonora, Mexico to a NAFTA meeting on fruits and vegetables, and I was asked to give a talk on the future of energy for agriculture. My talk there was pretty clear about energy over all, but I was asked also about the water issues that were looming for the Western United States and Sonora, Mexico, and I was introduced to a project that had been languishing in Sonora for many years, to put a nuclear power plant down in Sonora and desalinate water, and send it around Sonora, and also send it north to Arizona, and put it into the Colorado River, and also make it available to the Central Arizona Project. I had been off and on involved with that ever since 2004. People just can't seem to get themselves organized to work together to do something like that.

Dr. Kemm talked about Africa. There's a lot of

people who don't know much about Africa. There's plenty of water in Africa. Africa's basically 4,000 miles wide and 4,000 miles long: There's absolutely no reason why we don't have a distribution center for water in Africa, using nuclear power. Today, with the advent of micro-reactors we could do that very easily. And I do not see any reason at all why the world doesn't get together and start working on that in Africa, as we should all the way on the West Coast of North America, from Alaska all the way down into Mexico.

**Kelvin Kemm:** I think that is a very major problem. We find that you get debates on things like nuclear power, and you get professionals in the field who know what they're talking about, people with years of experience, but they come up against the florist, and the baker, and the hairdresser and so on, who are all well and good in their fields, but then the anti-nuclear lobby and the extreme green lobby come along and say “everybody's entitled to an opinion.”

Now it's true that everybody's entitled to an opinion, but you're not entitled to argue with professionals when they tell you something. And this is why some of the frustration that one sees about wind and solar and so on. And all the speakers have spoken with very similar messages, that people say, “Oh, we just put batteries up,” and they imagine some little battery that's going to keep you running all night and so on. It's not going to. And we've got to look towards Africa, and say, as we expand in Africa, let's not expand the wrong philosophies. Let's get it right, and right means the small modular reactors and the micro-reactors—and I agree entirely.

And pumping water from one place to another—I mean many kilometers, hundreds of kilometers—that can be done. Here in Pretoria where I am, we are 600 km from the coast, but the oil refinery down there pumps petrol and diesel underground 600 km from the coast, and it comes out here. You know, this type of thing is done; there's gas pipelines from Mozambique into South Africa. So imagining long pipelines, water distribution in a large scale, get the engineers who know what they're talking about; get the professionals who know what they're talking about, and do this thing properly—not from demonstrators in the streets waving placards.

**Helga Zepp-LaRouche:** Well, since you mentioned Transaqua, this is a project we have been fighting for, for 30 years, and now it's basically ready to go. There was a big conference in Abuja, Nigeria in February 2018, with the six countries of the Chad Basin, neighboring countries, and they all agreed to go for it. And there is a feasibility study under way from the Italian side, so I think what we actually need is to get going on the question of taking care of the water for 2 billion people on the planet, and Transaqua would be one of the major projects to refill Lake Chad, to give irrigation water to the countries between the Congo River and the Lake Chad Basin. There is absolutely no reason why this project should not go into action right away.

And the same goes for many projects. The problem is really a political one, because there are certain forces linked to the big money in the City of London and also Wall Street, who are betting on the Green Deal, and the Green New Deal, which is going to be the end of the industrial nations as industrial nations. I think we are really at an emergency point, and the fact that all of these crises are coming together, the water, heavy rain causing floods, which could have been prevented; the pandemic not being under control; the clear recognition that the endless wars have not really resulted even in serving American interests, if you would define it as an American interest.

I think we need to get a discussion that there needs to be a complete change in the axioms, and in my view, it starts with the image of man. Man is the most advanced part of the universe. The ideas generated by human creativity, discovering scientific principles of the physical universe—that is the most advanced part of the evolution of the universe, because if there would not be a correspondence between what the human mind creates, and the laws of the universe, it would not function. This is the simple proof that the human mind and the laws of the universe are coherent.

And we need to have a discussion which appreciates man—as my late husband said [in the 1985 video] at the very beginning of the first panel—that is what differentiates us from the beasts. We are not a parasite; we are not a burden to nature. And I think we need to have a fundamental discussion about that difference. All the other things, the environmentalism, the money greed, all of this flows out of the image of man—at least that is my humble opinion.

**Alberto Vizcarra:** When Richard McPherson

spoke about discussions that he had, here in Mexico, of commercial binational agreements which are discussed in terms of NAFTA (North American Free Trade Agreement) or what's known here as the TLC (*Tratado de Libre Comercio*) on the Mexican side, the free trade agreement between the United States and Mexico and Canada, this reference is very important. Because we need to take note of the fact that none of these great projects, these binational projects that have to do with the great limitations we have for growth, and especially the problems we have vis-à-vis water, none of this is dealt with in the NAFTA agreement or its modern forms.

Basically, it's a treaty which wants to just reach certain trade agreements, and to take advantage of cheap labor on the Mexican market for the purpose of cost-reduction for the consumer market in the United States, and for the world market. So this treaty, Mexico has gotten nothing positive out of it, quite the contrary, we've had a fall-off in all physical economic aspects of our national economy.

So that's why it's so important that we take up again what had been posed, going back all the way to the 1960s, which was abandoned and given up on, since the agreements then were broken up. And I think this is a subject matter that will be taken up in the next conference. This is one of the points Lyndon LaRouche very wisely took note of going back to the 1970s, as an inflection point, a decisive turning point that would leave us to the torturous situation which the world is facing today, and especially the difficulties we're facing in the countries in the South.

Clearly, we need a world financial system that would have everything to do with the physical economic processes, and those processes which increase not only the potential capabilities of labor, but of nature itself to be able to increase the platforms of the growth of the countries themselves. Lyndon LaRouche, then, and we here in Mexico felt we were preferred by him, cared much about us, but he found it so important about the relationship of the United States and Mexico that he would always pose in that relationship a potentiality, an exemplary singularity for the entire world. I think that that possibility exists. It's latent, especially as we're facing such extreme difficulties when we've reached the extreme problems that we face today.

And I think that the utopia of the green world, of this whole idea of a climate Armageddon, clearly on its own doesn't have any future, but it's something that is so

false that it is going to collapse as rapidly as it has risen up in the last months and years.

I think we're at that turning point, that branching point, and if we take up the purpose of telling the whole world that Mexico, the United States, Canada, can green one of the greatest deserts of the world, and if we can create an ecological change on a hemispheric level, raising the potential of economic growth in this entire region, and converting the desert, changing it from a mirror, which is getting rid of clouds, to a growth area where we can bring in the greatest growth in rainfall and so on, we will see that man is not a bad thing for the hemisphere. It's not something that is a negative condition, but is rather a blessing which can help transform the entire nature for the benefit of all mankind. This will signify millions and millions of tons of grain to feed the entire world; this will mean climate conditions which will be encouraging life for the whole hemisphere and the entire world.

So we should fight for that together and let's get the scientists out of their cubicles.

**McPherson:** In 2004, the new President of Mexico put in a new secretary of energy and the new secretary of energy organized a small group of advisors. The man in charge of the Laguna Verde power plant knew me from the International Atomic Energy Agency, and suggested that they bring me down there to talk to them. So, people think of me as a nuclear person, but I'm really an all-energy person. I decided to take down there a paper with me a paper I'd written about Pemex [the state-owned and operated petroleum company], and how Pemex could save \$2 billion a year, for the Mexican government.

I went down, spent a week with them; I went and visited the old friend from Laguna Verde, spent most of the week with the entire new crowd for the Energy Ministry, and we also went to visit the president of Pemex with my plan that I'd written. The president of Pemex immediately dismissed this as not interesting; but the new energy crowd was very interested in doing things with Mexico. Unfortunately, I haven't seen much of that happen; I've seen almost none of it happen. And what everybody's talking about here is organization, and the lack thereof, and cooperation.

I suddenly have a feeling about this group: Probably some of you know about the annual Davos economic conference that's held every year in Switzerland for the last 50 years. I followed that very closely for lots of

years, and I will tell you that this crowd that I'm listening to and watching right now should be on equal footing with that crowd. But not just equal footing, but what we have to say—what you all have to say, what we're saying here is far more helpful to the world than what they're doing in Davos, because in Davos, it's self-interest for a bunch of billionaires around the world, and it's not for the people of the world. And what I'm hearing with everybody here, it's for the people of the world and for the good of the world.

**Question:** Dr. Romanello mentioned that the development of thermonuclear fusion is not as easy as we may want it to be. Tritium is not produced in nature, and must be produced artificially with lithium, which is already increasing in price due to its frequent use in batteries. Do you think this problem can be resolved with the use of helium-3? Although it isn't abundant on Earth, it can be mined on the Moon, and act as a replacement fuel for tritium, which would waste less energy and be much easier to contain.

Other than that, how else can we speed up the development of thermonuclear fusion, to replace fission eventually in the global economy?"

**Dr. Vincenzo Romanello:** There is actually another opportunity which is being explored, in this period, which is thermonuclear fusion with helium-3. This is very interesting, because this kind of fusion does not produce neutrons, and the result is very clean.

But there are two problems: First, we do not have helium-3 on the Earth. We have to go to the Moon to take it. Of course, we can go to the Moon, take enough helium-3, and run a country like China for one year, but this is a futuristic project, first fact. Second fact, the temperature needed for this kind of reaction is much higher than D-T [deuterium-tritium] reaction, which is already eight times the temperature of the Sun.

So, yes, interesting from a scientific point of view, but not that easy to achieve. Of course, it's good that we pursue the research in this field.

I agree that fusion is a very interesting technology, a very important technology. We have to pursue the research into it. We have to put a lot of money and good ideas into it, but for sure, whatever we do, we will not have fusion reactors in the next years. We will have to improve our technology with fission and use fission as a bridge technology, as I stated in my presentation.

**Question:** Dr. Romanello seems to say that no containment vessel can hold 100 million degrees; how does the magnetic field protect the container from the reaction? Why do we need 100 million degrees here, if the Sun only needs 15 million? Why is that needed for fusion?

**Dr. Romanello:** The fusion which happens on the Sun is a different type of fusion, it uses different types of isotopes. The most valuable way on Earth, it was decided deuterium and tritium, and deuterium and tritium needs really 100 million degrees Kelvin. And in any case, it would not be any different it were also 10 million degrees; it would be the same. There are no materials that are able to withstand these kinds of temperatures. So we can only do one simple thing: Use a magnetic field to confine it, and obviously, it's not a simple magnetic field. It's a very complex magnetic field, with some torsion you have in a toroidal situation, in a very special configuration, and of course it uses superconducting materials. So you have very low temperatures in the conductors, and within a few meters, you have a million degrees. It's a complex technology.

Moreover, you have also to recover the ashes, practically, of the reaction, with a special component which is called a divertor. A divertor has a very high heat flux, which is extremely difficult to handle. There are very technical points—it would take me a full presentation to explain the other critical points of fusion, but they are certainly not easy to withstand.

They're trying. With ITER (International Thermonuclear Experimental Reactor) they are trying, and they will try to start deuterium-tritium fusion in 2035, if I remember correctly. But then, we have only to remember that ITER will be a gigantic physics experiment. No electricity will be put on the map. So when we will show, around the first half of this century, that fusion is feasible technically, we will have to design a reactor which is commercially viable, and feasible and convenient. This will take place. They're not even sure it is even possible to do this, because the technology is very, very complex. And it will take time.

**Maj. Gen. Peter Clegg:** I am tremendously impressed by all the presentations I have heard today. I come out with a positive and a negative observation. The positive observation is, that, as has been stated, we have the technology to make such a dent in all these

problems, and so the reasons for the world's failure to get together and solve some of these problems is not technological. The reasons are essentially political. That's meant as a positive comment. On the one hand we've seen what the scientific community has given us. It has given us answers. It has given us the ability to deal with a lot of these problems.

Now, on the negative side, what we have seen today, which is disturbing to me, is the politicization of the scientific community. Everybody says, we've got to "look at the science," all the politicians are now saying that, and of course, they're the last ones who look at the science! [laughter]

The problem with the politicization, is that 90—perhaps even 95 or 98% of the scientific, the quote "wise scientific community" doesn't know anything about these specific issues that we're talking about. Scientists are great in their field, and they're experts in their field; they make contributions in their field, but they don't know about the wide scope of science. So the opinions of the 95% of the scientific community that we hear about aren't worth any more than anybody else's opinion on many of these questions. They're just as ignorant as the rest of us are.

And this observation gets back to the fact that so many people are lemmings. We hear that the quote "scientific consensus"—well, first of all, there is no scientific consensus on a lot of these questions. And I can think back to the 1970s, one of the speakers mentioned the global cooling that took place in the 1970s, well global cooling at that time was viewed as, again, the world's most significant problem. The "scientific community" was united behind the fact that this was a critical problem which had to be dealt with. We saw President Jimmy Carter running around the White House with his sweater on, making speeches about the subject. And here we are today, getting all excited about global warming.

And the scientific discussion itself, in many cases, is ridiculous. I mean, the questions being asked: do we have climate change? Well, of course, we have climate change! Climate change has existed ever since the world existed, and it will exist so long as the world exists. The climate is always changing. Everything about the Earth is continually changing. Does man influence the climate? Of course, man influences the climate, starting from the absurd example: every time I sneeze, I am impacting in some fashion the entire world. Of course, what is the significance of that? It's so

minute, it's ridiculous to even discuss it. So of course, man affects the climate.

There's an article on this very subject, today, interestingly enough, in the *Wall Street Journal*, on the editorial page, about why the public respect for the scientific community is declining. And I think this is the reason why it's declining. I commend that article to everyone. Scientists need to speak up in their fields with the facts. And unfortunately, we human beings have to be hit over the head with a two-by-four, before we generally react to those facts. But right now, there is so much misinformation dominating the discussion, perhaps a majority of the people, certainly in our country today, are operating under completely false notions about what's really happening on the Earth today. And we're undertaking ridiculously expensive projects to reengineer the entire world, and this will have no effect, whatsoever, on quote "climate change."

**John Shanahan:** [Excerpt from his presentation] My nuclear colleagues, and many international nuclear organizations and websites all over the world, are advertising and claiming that nuclear power can solve a so-called anthropogenic, man-made global warming crisis, that is coming up in the next 10 years. I respectfully disagree....

The founding civilian engineer for nuclear power in the United States, Ted Rockwell, said in testimony to Congress, sometime around 2011, that nuclear power advocates should not claim that nuclear power can solve so-called manmade global warming crises, but rather—and this is really true—that nuclear power can help mankind deal with all natural climate change that happens. And if my nuclear colleagues would switch from their claims about helping solve a climate crisis, to helping mankind deal with all climate crises, we would be on the right track and make a lot of progress going forward.

**Question:** A few years ago, I encountered [Joachim] Schellnhuber at a Berlin presentation to an audience of mostly academics. The audience was more angry at me than at Schellnhuber himself, for publicly challenging his genocidal plans for the world. I had challenged their hero, the great defender of their worldview of an entropic universe. My question is, behind the mask of ecology and green, are we simply just facing the enemy—of good old cultural pessimism—and if so, are we not becoming enslaved by that paradigm? Is the only remedy

not a cultural upshift through rapid economic development on a worldwide basis, to break out of this cultural stranglehold?

**Zepp-LaRouche:** Behind that pessimism is the oligarchy, and very concretely, Schellnhuber, who used to be the head of the Potsdam Institute for Climate Impact Research, who insists that he be called "Sir" John Schellnhuber, CBE (Commander of the Most Excellent Order of the British Empire), and he was knighted by Queen Elizabeth in 2004, but he is in any case carrying out the colonialist imperial policy of the British royal household.

We have published papers about that a lot. If you look at the history of environmentalism, it started with Thomas Malthus, it started with the British East India Company, with the various forms of British conservationist movements around the turn from the 19th to the 20th century. It was carried on by the policy of racism in the Nazi period, and because eugenics was discredited by what happened in Nazi Germany, it was then called conservationist policy and became the environmentalist policy.

But it's a long tradition of keeping the world population reduced, to have an oligarchical elite. In the past it was mainly monarchies and high nobility, people who think that they are some better species. Read the letters of Joseph de Maistre to a Russian prince: He lays it all out there. And nowadays it's the financial elite, it's people who think they have the right to have privileges at the expense of large masses of backward people.

So if you scratch a little bit below the surface, what comes out is really an ideology to keep the masses of people down, to the advantage of a small elite. And I think that that is the main problem, that people don't understand that; for example, they have built a network of cluster agents in the mass media. For example, in Germany, the media are almost entirely controlled. When you listen to the news, there is not one news item which doesn't have a spin in the direction of green climate change, climate catastrophe—it's a form of brainwashing. And I think people have to understand that unless you attack in this political fight, this is not going to be won.

**Question:** How can the present process of fighting not only this pandemic, but the proliferation of new pandemics and new diseases, create a new health plat-

form? And what are we speaking about in terms of the energy and logistical needs required to do that, including the need for water and other such things?

**Zepp-LaRouche:** The reason I mentioned the CDC (Centers for Disease Control and Prevention) report from yesterday about this so-called “super bug,” is, it took a while before people realized that it doesn’t help you if you are all vaccinated in the United States or in Germany, or wherever, if, at the same time, in Brazil, in India, in Africa, you have an explosion of mutations, because these mutations come back.

Now, if this problem is getting scary enough, I still have the hope that eventually there will be a rethinking that a pandemic is a pandemic because it’s worldwide, and that unless you deal with this problem in every single country, you’re not doing much good for yourself, because you are risking that it would come back and haunt you, because it may make the vaccines you already have applied obsolete.

So, I still think that, as things get worse—and the reason why I put all these things together—the flood, the wrong explanation for the flood, the pandemic, the lost war in Afghanistan—I think we have to come to a point to consider that there is something fundamentally wrong in the axioms of politics in general. And that what I’m trying to get is a new paradigm of thinking, you know, this is a very big subject, and would probably require a whole day’s conference to give justice to it.

But the bottom line is that we have to think how the universe functions. And we have to bring the political and economic and social life on the planet, into cohesion with the laws of the universe, which are anti-entropic, and that the human mind is the most advanced aspect of the evolution of the universe.

If you start with that, you come to an image of man, you come to an understanding of the laws of the physical universe, and then, that has certain implications. And then you come to the conclusion that we’re not in a closed system, the limits to growth theory is completely fraudulent, because it assumes that the planet is a closed system, while the little blue planet is just a tiny planet in a huge universe, where at least 2 trillion galaxies are known already. And that has certain implications. And I really would think that this question of bringing the life on Earth into cohesion with the lawfulness of the universe is a very important philosophical approach.

**Dr. Walter Faggett:** I first want to thank the panel. I was a chemistry major in college, but I’ll tell you, this was like a course to me. I learned so much from all the experts on the panel. I was especially impressed by the slide in which they showed the comparison of life-expectancy and availability of energy. I think that was a very, very profoundly important slide.

But I think also, until we tackle the issue of our security represented by the worldwide pandemic, there’s not much we’re going to do in many other things. We know how it impacts the economy already. And I think Robert Zoellick from the World Bank made a statement in the *Washington Post* in terms of our security being much like the transnational for the climate change: We cannot address it country by country, and this really emphasizes what Helga was saying before. How we need to have, in order to have health security for everybody, we have to have major developed nations collaborating to have a modern health care system, again, this is our chance to prevent the war of tomorrow—I don’t know if you folks have seen that movie. What we’re looking at now, with all the new viruses that we’re anticipating, what we do about this pandemic is really going to be the future of mankind.

I won’t take the time to elucidate all of the things that we want to recommend in terms of having every nation have a modern health care system, but I think this conversation enhances the possibilities, for, indeed, making energy more available to developing nations, will enhance the chances of improving health care systems in those particular countries.

**Question:** Could the United States today redevelop, retool, and rediscover its industrial, scientific, and productive capabilities, which might be slow in gearing up at first, but could increase to mass production? Would the modular design of reactors, as opposed to craft design, reach anything like the kind of gear-up we had seen in the Second World War? And, what is one of these micro-reactors capable of?

**Dr. Kemm:** I think that small modular reactors and the micro-reactors are the answer for Africa. And there are a number of reasons for this: One, as I said earlier, is the size of Africa, therefore, there are many situations I can imagine where there could be a small grid around a small modular reactor, maybe 10-20 km wide, or near a mining complex, or put it where you want an industrial area. You don’t have to connect it to a nationwide grid

before it becomes valuable. So this idea of a nationwide grid existing before you have sufficient power points, is wrong. You have to put power points, in the form of small modular reactors, where you want the power. If you can link it into the national grid, all well and good, but that's not necessary.

Similarly with micro-reactors. As it was said earlier, the micro-reactors can be buried underground. There's all sorts of ideas that will come out. And in fact, here in Pretoria, we started developing small modular reactors in the early 1990s; where we are now is, two have been developed. One is really for us to go ahead with the commercial program, to put it into operation in half a dozen years' time. A huge amount of work has been done. Fuel manufacturing was perfected here, that was done—these balls that go into this type of reactor, and that's all been done here. There's also a micro-reactor development here of 10 MW, and ideas are to look at African usage, also usage for many similar places around the world.

Some time ago, I was invited to be a speaker at an event where I met the head of nuclear for Indonesia, who had also attended there. And I was talking about the large spaces of desert sand that have to be crossed in places like Africa and so on. He said, "Yes, but look at Indonesia. We have all these islands with water in between." And I must admit I was struck. I thought, "Good heavens, he's quite right!" He says, "We can't run cables between each island." And so we have to put something like small modular reactors, micro-reactors and so on, on these different islands. So I see all sorts of opportunities that will come about for these technologies.

**McPherson:** I have gotten very involved in how to go back to manufacturing reactors on a large scale. And I can't tell you too many specific details right now. The question that you asked was, could the United States? The answer is easy: "Yes, it is." In the last four years, I found a company here in Blackfoot, Idaho called Premier Technology, Inc. They've been making parts for reactors for people around the country for the past 20 years. They have what's known as an NQA1 quality assurance program under the American Society of Mechanical Engineers. They've done over a thousand manufacturing jobs under NQA1. It's a small company, owned by a man and his wife; it may be a small company in some people's eyes—it's a gigantic company to myself.

I got them to make an agreement with a reactor designer out of Tennessee, Dr. Paul Marotta, for a micro-reactor. I can tell you, through the use of some existing robotics, some increasing robotics and the use of artificial intelligence, the company is gearing up to be able to do hundreds of units a month of a 10 MW size natural circulation molten salt nuclear battery that has no moving parts other than the control system. There are no pumps, there are no valves. It's what I call simplicity in design. It is the simplest design I've ever seen, and I've had an opportunity to see most of the designs around the world. And when you talk about places such as a mine, a water pumping station, a small city, what Kelvin was talking about—Kelvin was talking about really getting away from the grid and going to micro-grids, and that is really the trend of the world. There are too many issues with the way that we put in these long transmission lines. The molten salt nuclear battery will allow us to put electricity directly to the user.

Electrical systems are generally divided into a production system, which is a power plant of some sort, that then goes into a transmission system, and then it goes into the distribution systems. Each one of those three segments of producing and delivering electricity has to have its own profit center and they have their intended overheads. They also have line losses and depending on the country, there's average line losses that go anywhere from about 5% to 20%. The molten salt nuclear battery delivers electricity directly to the user without those three segments in their overhead. It also eliminates the line losses that we have along long lines.

There would be something, I would venture to say, by September, that will be very public about the molten salt nuclear battery. I have a team of 54 nuclear people that work with me; most of us came from the U.S. Navy program. We've assembled it in the last five years. We try to help everybody, we try to help everybody in the United States. We right now are really focused on the Molten Salt Nuclear Battery because we know how it will be manufactured; the manufacturing plans are just now being completed. I suspect they'll be completed within the next year. And we can start manufacturing these not just for domestic use in the United States, but also for the rest of the world. And I know that Dr. Paul Marotta is amenable to licensing the manufacturing technology to other countries.

I will say that—probably shouldn't, but I will—using supercomputers, the fields have already been

looked at for uranium, plutonium and thorium. All three of those fissionable materials can be used in the Molten Salt Nuclear Battery. The most likely one is going to be uranium for a while. Then we'll see the use of thorium; people think that thorium is easy to use. It's not so easy to use. The reason that they ran plutonium through it, is because there's a bunch of plutonium lying around the world that needs to be used up and people are planning on—they're not planning, they're spending a lot of money on figuring out how to hold onto it and store it, and you don't need to do that anymore.

So your question about can the United States gear up? Yes, but so can a bunch of other countries, including South Africa.

**Question:** It was mentioned that nuclear reactors produce very small amounts of waste. That's contrary to what I have heard in the past. One account claimed that the United States has a football field size nuclear waste dump site. Can you please shed more light on this?

**Dr. Romanello:** Well, when we speak about nuclear waste, we have to understand what types of waste we're speaking about. There are three types of waste. There is low level, intermediate level, and high level. Low level represents 90% of the waste, and does not represent a serious problem. Our problem is high-level waste, but high-level waste represents a very tiny amount of material, just a football field, for example, so very small. Because one nuclear power plant produces a few cubic meters of this high-level waste—a lot of waste, actually, but the high-level is a very tiny amount. One citizen produces a small ball of this waste in one year.

So waste is not a problem: Waste can be handled in geological depositories if there is the will to do so. Science and technology can handle waste; moreover, there is the transmutation technology, about which I was not able to speak, but there are a lot of studies of dedicated conferences of scientists working on projects of transmutators which can transmute things. Of course, it would need a lot of time to discuss, and explain this in detail, but there are many ways to handle this. Maybe a dedicated discussion should be—however, what I say, be very careful, because the media are not telling the truth about waste. They're simply scaring people exactly as they have done with global warming.

And just to conclude, I'd like to make some points

about the discussion up to now.

First, the political influence on science: when we speak about the political influence on science, we have to understand how it works today in a very dangerous and bad way. Because if a crazy politician decides, for example, to stop diesel engines by 2035, he or she will never say, "I want to do that." They say simply, "There is climate change, scientists say that there is climate change, and you all will die." And obviously, there will be some scientists who will say, "Yes, this is true." And this happens because many scientists are waiting for funds, and funds come from the governments. This is a very bad circle, which should be interrupted somehow. Very bad, and very dangerous.

Second, consensus. Let's remember that consensus was against Galileo Galilei in his time. Consensus was against Albert Einstein, even very recently. In fact, remember that Albert Einstein won the Nobel Prize for Physics, and not for the Theory of Relativity, but for the photoelectric effect.

And finally, one thought about the small modular reactors: We can design whatever we want. Small modular reactors, fusion reactors, helium-3, but at the end of the day we will have to ask ourselves, what is the cost of the new technology? Because if other technologies would be cheaper, it would be a problem for us. For example, the small modular reactor and the molten salt reactor were mentioned. In Czech Republic, the Research Center Rez is designing a micro-reactor, 20 MW power, which can produce heat or electricity; it is cooled with molten salt, it's fueled with TRISO, and its power-density is so low that meltdown is impossible. And we are trying to design and develop and build a mockup of this reactor.

So, there are areas, there is the technology, but as a nuclear engineer, I have to warn you that sooner or later, we will hit the wall of the price, and so this will require some development. It is not written anywhere that we will be able to do it.

And as a final remark, I would say that the future can be bright or can be dark. It is not written; it is not sculpted in any marble tablet with lightning by God. It depends on us, and how rational and peaceful will be our approach.

**Dr. Kemm:** Nuclear is incredibly important for the world and particularly for Africa. And many people must understand that, because there are too many people saying in newspapers and so on around the



world, “It’s not Africa’s thing, Africa’s not ready for it.” In fact, there’s a dozen African countries that have already formally notified the International Atomic Energy Agency that they plan to go nuclear. South Africa has had a nuclear power station running for nearly 40 years now. It’s the most southerly nuclear power station in the world, and so we’re well-experienced in this business.

What I see for Africa now is if we have small modular reactors, we can link them together a lot, too, because of modern internet techniques. So, we can have a network of reactors, where in central control rooms, we can see the temperatures in different reactors, and pressures and so on, and questions can be asked and traded backwards and forwards; we can exchange training; there’s all sorts of networking possibilities so that we can do a lot together, and I see that as very important, so we don’t have to duplicate many regulators and many processes and all sorts of things like that.

Here in South Africa, just on the nuclear waste thing: We’ve had a nuclear waste repository, possibly one of the biggest in the world, running for about 35 years now, very efficiently, yet it is not yet taking high-level nuclear waste, because the politicians haven’t yet decided to do that. But there’s no reason why it can’t.

So the anti-nuclear lobby in the world wants to make nuclear waste an issue, now that people like those in the European Union are saying that nuclear is considered “green” because it doesn’t emit carbon dioxide. The anti-nukes say, “Yes, but look at the waste.” The waste is *not* an issue, as Dr. Romanello said. It’s a very small volume, and when professionals are handling it, there’s nothing for the public to be scared about.

**Maj. Gen. Clegg:** I’m very encouraged by everything I’ve heard here, today. Maybe things are not quite as negative as I sometimes think they are. Initiatives like this can only serve to help spread correct information about the nature of these problems, and defeat a lot of the propaganda around, which purports to point in the right direction but almost inevitably is the wrong answer.

**Vizcarra:** I would like to thank you for the invitation, and to send a big *abrazo* [hug] and my appreciation for everything, and especially my love to Helga. We admire her tremendous perseverance, and we, too, are involved in trying to imitate that perseverance, I believe.

It would seem that we’re in an era in which they’re trying to impose on us the idea that that which is rational or reasonable is impossible, but as that great Mexican President José López Portillo said, “We really are facing the moral imperative to make possible that which is reasonable.” And many of the things which have been presented here from the standpoint of science, from the standpoint of the great infrastructure projects for the world and for the hemisphere, are absolutely reasonable, and therefore, possible.

I believe that if we maintain this kind of international coordination, if we grow in our joint purpose in this kind of international coordination, the world has hope. And once you become part of that hope for the world and humanity, there’s no room for failure, there’s no room for pessimism, there’s only room for optimism and trust that we will be able to lead for the future and we will accomplish in the present the steps that are necessary for the great solutions.

**McPherson:** Helga, thank you for continuing this. I am more than pleasantly surprised from what I hear from this crowd, and I will do everything I can to support the efforts of this crowd. I’m at a time in my life that I’m trying to give back. I tried to escape nuclear power ever since I retired from the Navy, in 1983. I’ve been unable to do it: I moved to Idaho to learn how to fish and retire, and they found me three months later. And in December 2016, I said, “OK, you people will not leave me alone, so I’m in with both feet.” And I do not have anybody that I need to answer to, and I’m not looking for a job, not looking to get advanced, so they’re going to hear the truth about energy and nuclear power from me, and I’m up to my eyeballs in it.

I will tell you, and it’s not meant to be arrogant, but I really don’t care a lot about nuclear power. It’s really easy to me. What I care about is under the nexus of agriculture and water, and me getting to help people and getting people together under the solutions for agriculture and water, I’m just using my work in nuclear power to do that. Because without the energy, we will not have the water and the agriculture that we need for the world. Period. It requires energy.

I listened to Dr. Romanello, who was talking about the cost of it: I will tell you that we are now going to get the cost of nuclear power down to a market-clearing price per kilowatt-hour that no one has ever seen before. Thank you very much for allowing me to be part of this.

**Dr. Faggett:** Thank you Helga, and the Schiller Institute, for including me on this panel. I'm really looking forward to coming out to Idaho to learn how to fish! [laughter] And also continuing to hear more about nuclear energy. I think that association of improvement of energy access resulting in increased life expectancy was an association I really hadn't thought about before. But once we get health security for everyone, and once the major developed nations begin to assist other nations, I think it's going to reset the stage for a lot of the innovative recommendations from this panel to be made reality. If we defeat this pandemic, the lesson learned I think will prevent the war of tomorrow.

**Zepp-LaRouche:** I want to tell Richard McPherson, you're not the only one who's happy to be with this crowd: I can say the same thing for me. Look at me as a person, coming from the Green Germany, it's a real pleasure to be among people who are not crazy when it comes to nuclear energy!

As a matter of fact, I think this nuclear technology, the fission, the different generations of fission, high temperature reactor, hopefully soon, thermonuclear fusion, these are absolutely important for long-term survivability of man. One of his unique contributions of my late husband, Lyndon LaRouche, was to show the correlation between the energy flux-density in the production process and the correlative potential relative population density, which can be supported with that higher and higher energy flux-density. And that is a law of the universe: This is not an arbitrary question, because at each level of development you will have a certain degree of exhaustion of resources, of cost, and therefore, you have to go to the next higher level of energy flux-density.

Now, this, for example, led Professor Dr. Rudolf Schulten, who Dr. Kemm, you probably know, or knew, was the person who developed the High Temperature Reactor in Germany. And when it became clear that because of the Green insanity it was impossible to realize it in Germany, he gave the entire technology to the Chinese. He had many Chinese assistants working with him in Jülich at the time, so he gave it to the Chinese and said, "This technology is so important, that I'd rather give it to the Chinese than have it not developed." And now the Chinese have their high-temperature reactor practically ready in a short time to become an efficient, commercial energy source.

I think this is really an important question. The ad-

vancement of civilization requires a completely different thinking than we have seen so far.

And I just want to mention one thing in this context, and this is Dr. David Beasley (Executive Director of the UN World Food Program), who has said that there are 40 million people immediately faced with starvation. Now, there are more people over the year, but there are 40 million people who could die while we are sitting here talking. Beasley has appealed to such billionaires as Jeff Bezos, Mark Zuckerberg, and Elon Musk, and said, "You all made, in the year of the pandemic, between \$60 billion for one of them and the other one \$40 billion, and still another one \$10 billion: Among you billionaires of the world, can you not each give 5% of your profit, because we need for the World Food Program now \$8 billion to save these 40 million people. And can you not, instead of going to your space travel, which takes you into outer space for 10 minutes, give that money to feed these people?"

And I think that shows you, really, what's wrong. We have to have these kinds of discussions. I would really ask all of you nuclear scientists, and scientists in general, to join the Committee for the Coincidence of Opposites, which so far has been medical people and farm leaders, people of good will of various kinds; but if there would be a very conscious component in the Committee for the Coincidence of Opposites from the field of science, it would be really good, and bring the whole question forward a lot. So that is my request.

**Dennis Speed:** I'd just like to otherwise thank Sally Fernandez, who is the author of a book called *Climate-tized*, who gave me the idea to make sure that Tom Wismuller, Dennis Avery, Dr. Hal Doiron, and others who were recognized: They all are characters in the book she wrote. The book is a fictionalization about what would happen if many of the world's scientists who had discovered that [the set of claims associated today with] climate change was basically a fraud, were suddenly being eliminated by a nefarious power. That's not to wish that on anybody here. It's simply to point out that she has said to me, "You know, sometimes you have to go to fiction in order to be able to get reality across." What this panel proved today, and also the entire conference, is, you don't *have* to go to fiction. It is possible to find people who will stand up for the truth and do it boldly and without artifice, as a famous President once said.

*The entire second panel can be viewed [here](#).*