Introduction – Fifty Years from Now

Manik Roy, Director of Congressional Affairs, Pew Center on Global Climate Change; REIL

Past predictions of the future invariably have a fanciful Tomorrowland quality to them, and we know our grandchildren will laugh in fifty years at much of what we write here. That’s fine. What is important is how well they will think we responded to the challenges we knew we were facing.

No one in history has ever had a stronger scientific basis for predicting the future than we have today when we consider global climate change. Despite the phony “controversy” in some political and media circles, in the peer-reviewed scientific literature, the debate over the big questions is settled.

Thus the Intergovernmental Panel on Climate Change (IPCC) reports unequivocally that:

- Global sea level rise has accelerated;
- Mountain glaciers and snow cover have declined on average around the world;
- Average Arctic sea extent ice has shrunk by 20 percent at its summertime minimum since satellite observations began in 1978; and
- More intense and longer droughts have been observed over wider areas since the 1970s, particularly in the tropics and subtropics.

The IPCC reports with 90 percent certainty that:

- Most of the observed warming over the past half-century has been caused by human activities;
- Hot extremes, heat waves, and heavy precipitation events will continue to become more frequent;

The IPCC reports with 80 percent certainty that:

- Water availability will decrease in the American west because of decreased mountain snow pack and earlier spring melt;
- Cities with a history of heat waves will experience more frequent and intense heat waves in the future, with potential adverse health effects;
Coastal areas are especially vulnerable to the interacting effects of development, pollution, and climate change;

- Forests will experience increased stress from insect pests, diseases, and increased wildfire; and

- Africa, Asia, the polar regions, and small islands are the most vulnerable regions either because of the degree of climate change projected (polar regions) or the vulnerability and lack of resilience of natural and human systems (Africa, Asia, and the small islands).

That is what the science tells us. We can also make a few confident non-scientific predictions.

The first is that this future world will be viewed as quite grim compared to today’s world. A world of more intense storms, more floods, more drought, rising sea levels, growing strains on water resources and agriculture, and mass extinctions will surely be viewed by our grandchildren as far worse than the world in which their grandparents lived.

Which leads to our second prediction: Our grandchildren will look back at us with incomprehending horror at the moral indifference we showed at their plight. They will see that the science was as certain as it could have been, and yet the majority of our political and business leaders, and most of the rest of us, chose to deny it. They will wonder how we, their grandparents, could have played with them, read to them, spoiled them and loved them with all our hearts, and then driven home in our SUVs to our McMansions and plasma TVs, apparently unconcerned about the world we were leaving them.

Is there still a chance to redeem ourselves in their eyes? Only if we act now to meet the challenge.

Winston Churchill said, “Americans can always be counted on to do the right thing . . . after they have exhausted all other possibilities.” Churchill, of course, was speaking of another great challenge. We often forget that World War II had raged in Europe and Asia for two years before Pearl Harbor forced the United States into it. Franklin Roosevelt won re-election in 1940 only by misleading the American public about the need to face the challenge, saying “Your boys are not going to be sent into any foreign wars.” Although initially reluctant to face the war, however, once we entered it, we went in all the way. American leadership and sacrifice won World War II, and we now call our grandparents the Greatest Generation because of it.

If we in the United States can reduce our own greenhouse gas emissions, help developing nations cut their emissions and stop deforestation while increasing their standards of living, and help bring together the nations of the world in facing this challenge, we can redeem ourselves to our grandchildren.

Let us assume we can do all that, and that by doing so we limit the extent of climate change. What else can we predict about the world fifty years from now? (Now, of course, we leave not only science, but confident prediction. Now we enter Tomorrowland.)
First, every home, office, appliance, vehicle, and machine of our grandchildren’s world will operate on a fraction of the energy their equivalents use today. The cars and homes of today will appear as archaic and appallingly polluting as the trains and factories in the old silent film clips, puffing out their billowing clouds of black smoke.

Second, a large fraction of our energy will come directly or indirectly from the sun. The amount of energy that comes to Earth every day as sunlight dwarfs any reasonable projection of human energy use. Fifty years from now we will capture and use much more of that energy, either as directly as sunlight, or indirectly as wind energy or biomass.

Third, nuclear power will provide a lot more of our energy – assuming, of course, that we solve the waste, safety, and proliferation problems associated with current nuclear technologies.

Fourth, the carbon dioxide emissions from the fossil fuels we continue to use will be captured and stored deep underground.

Fifth, we will burn biofuels, then capture and store the carbon dioxide emissions underground, thus extracting carbon dioxide from the atmosphere.

Sixth, forests will expand and farmland soils will get richer in organic content (i.e., carbon), because foresters and farmers will be paid to store carbon on their lands.

Seventh, and finally, if we make deep enough cuts in our emissions over the next fifty years, chances are good our grandchildren will be able to adapt to the climate change that nevertheless occurs. They will retreat from or dike the current coastlines, be as parsimonious in their water use as in their energy use, build communities and emergency management programs better suited to survive regular intense storms, develop public health systems to deal with heat waves and the spread of disease, and so on.

Granted, it is a lot to do, but together we can do this.

We must do this.