

THE PRINCETON PACKET



SOLUTIONS

By Huck Fairman

Cars and our climate crisis: Emissions reduction needed

"If all emissions worldwide were stopped now, we would still have 100 years of warming, because of all the heat and carbon in the system."

The latest UN report warns a million species face extinction as a result of man's activity.

The first of these warnings came from Dr. Patrick Hossay, head of Energy Studies and Sustainability programs at Stockton University. While his talk to the local Sierra Club Chapter at Mercer County Community College focused on the role cars play and can play in our warming world, his detailed and very informative presentation ranged over many aspects of our climate crisis.

We need, he stated at the outset, an 80% reduction in emissions. But achieving that will not be possible by individual choices, however well-intentioned they are. In order to survive, we need policy decisions at the regional, state, national and international levels. We need gas taxes, carbon taxes, whose taxes are returned to citizens. We need changes in technologies governments can and need to help select and finance. Either we pay now, or we pay much more later, as numerous, recent hurricanes, floods and fires have shown.

Hossay surprised his audience by revealing New York City is our greenest city. Its transportation and energy systems contribute; so does the city's 'walkability.' Also the growing popularity of urban living among the young is a nation-wide trend. And this trend leads to another: urban dwellers don't need cars as much; many have little interest in them. Zip cars and other rental systems, along with light

rail, whose ridership has tripled recently, and other transportation modes may be the future for cities and even suburbs.

Hossay surprised again by revealing that car and truck manufacturers are ahead of many citizens in recognizing and preparing for the future. Their engineers anticipate electric and self-driving cars and trucks are the future, not only in this country but around the world – which is their market.

Hossay observed the internal combustion engine has been developed about as far as it can go. They are cleaner and more efficient than ever – in many nations and states, air quality has improved, even as elsewhere it has worsened. He predicts the internal combustion engine has maybe another 50 years of significant market share. The world it served is changing.

He reported many people worry self-driving cars are not safe, but he reminded us 35,000 Americans are killed in automobile accidents yearly. Globally, the toll is 1.35 million deaths. Of those, 95% are the results of human error. In fact, many deaths among both drivers and pedestrians result from distraction. People are not paying attention to either their immediate situations or the global one.

The "New Urbanism" has a number of benefits. We spend less time in our cars, alone. We engage with others more. We walk to markets and interact with those there – not unlike life a century ago and before. Moreover, Hossay noted turning downtowns over to pedestrians does not kill businesses. This is visible in a number of European cities with vibrant, pedestrian centers.

He joked if an alien landed here, he would think the world was ruled by au-

tomobiles, as everything is designed for them.

On a more serious level, he pointed out transportation engineers and planners need to focus on "the last mile." Mass transportation, and even cars, can bring us to within the last mile of our destination. How we get that last mile is the challenge. The solution is probably "multi-modal" and can include ride-sharing, rentals, buses, scooters, light rail, rent-a-bikes and even walking. Ride-sharing, he notes, requires fewer cars. Cars, in general, are used only 15% a day. To serve people for that time, we don't need to own cars. In fact only one in five people regularly need a car.

Hossay quoted former automobile executive Bob Lutz, who predicted dealerships as organized today may last only another 20 years. Instead, consumers may subscribe to, rather than purchase, a Ford or Chevy, etc., allowing access to different models for different needs. The manufacturers will be selling transportation, not specific models. Lutz foresees ride-sharing and ride-hailing will grow in popularity, particularly among the young.

And this, Hossay predicts, will lead to more self-driving cars, as riders want short, quick transportation. In fact, today, Hossay reports, 70% of the conversation in Detroit is about self-driving cars – which are becoming safer. He concedes people are still wary of the safety of self-driving, but he believes the statistics will alleviate much of that concern.

Hossay, then, pointed out while the list price for his two Chevy Bolts was in the low thirty-thousand range, tax rebates and credits reduce the price to around \$22,000. That savings serves the environmental benefit of all, in reduced emissions.

The record rain levels in New Jersey, not to mention the flooded Midwest and Missouri-Mississippi valleys, warn us of the repercussions from fossil fuel usage. But, Hossay noted, people, by and large, don't turn to electric cars to save the planet, but for their performance and looks. The acceleration torque of an electric car is immediate and initially more powerful than that of a gas-powered car.

Other innovations will include wireless charging, where an owner simply drives into a garage whose system, which is embedded in the floor, automatically charges. (Solar panels can be added to power the system). But other fuel technologies, ethanol, algae and fuel cells are either equally expensive or don't provide performance or require infrastructure changes.

He also warns the energy grid in the nation needs urgent upgrading, particularly as electric cars grow in numbers. And with that growth, energy storage and generation are two large challenges ahead. The availability of lithium for batteries is uncertain, with only a few global sources. Recycling batteries is not simple. Zinc combined with air may be a future alternative.

But turning to electric vehicles could reduce emissions between 50% – 90% – an urgent need. Trucking companies are finding the cost-savings of electric trucks and the potential one in self-driving technology to be very attractive.

Lastly, Hossay contended the benefits of all of these changes, which offer reduced emissions and costs, as well as greater safety and fewer fatalities, by as much as 50%, really call for our governments to become involved in both developing and selecting the best alternatives.