Climate-actions.docx

NOTE: SLIDES 1-3 are narrated using standard Climate Reality talk. Following is additional narration

**Slide3 (2nd click of slide 3)**  4000 cities, businesses, and organizations have same goals, under many campaigns, as the “Climate Alliance”, and all meet the Paris Agreement.   
The UN IPCC and the world’s climate scientists tell us we must halve our GHG emissions by 2030, and reach netzero by 2050 to avoid the worst of climate change.

I will describe how we can work together to meet this requirement.

I will start with a little history: 3 years ago, NJ elected a pro-climate governor. THIS HAS MADE A NIGHT AND DAY DIFFERENCE.   
NJ is NOW on a path to near net-zero emissions

OUR NJ EXPERIENCE SHOWS THAT THE NOV3 ELECTION, 3 weeks from now, is critical to make progress toward GHG reduction:   
Your responsibility is to elect leaders who are pro-climate.. Here is the progress to expect with the right leaders:

1. NEW JERSEYS CLEAN ENERGY INITIATIVES  
   NJ, under leadership of the new governor has:  
    -joined with 25 states in the “US Climate Alliance”.  
    -drafted the Energy Master Plan which DETAILS HOW to reach zero emissions.

* rejoined, with surrounding states, the Regional Green House Gas Initiative on clean energy and job creation
* Enabled Renewable Energy Legislation & signed Executive Orders. These are moving us to clean electricity, increasing electrical storage, launching community solar, & launching big windy announcements of a new offshore wind industry
* and will have 330,000 EVs registered in the NEXT 5 YEARS!- & 2 million EVs by 2035
* caveat- for the last 2 years, I and 1000s of others have been asking the NJ governor to STOP new fossil fuel infrastructure- buried pipelines, and electrical generating plants, and the LNG port we will hear about. The gov has been VERY slow to challenge the entrenched fossil fuel base

1. NJ ENERGY MASTER PLAN (EMP)   
   The NJ Energy Master Plan has 7 strategies

* Adds public transport, & charging stations everywhere to encourage Electric Vehicles
* distributes Renewable energy among rooftops; and big patches of low-cost community solar
* Makes existing buildings efficient via insulation, sealing, and upgrading appliances
* Provides workforce jobs & training for Environmental Justice Communities
* Modernizes the Electrical grid, starting with 2 months ago, smart electrical meters installed on all buildings.
* And a Clean Energy Innovation Economy that will grow world-class research, and create jobs.

1. INTEGRATED ENERGY PLAN COST ANALYSIS  
   The Rocky Mountain institute, one of the consultants on the NJ Energy Master Plan, identified the least cost way to realize NJ 2050 goals. The path is almost free of cost
2. NJ TOP 6 SOLAR STATES: SOLAR PANELS ON 2 MILLION..  
   NJ is now #6 in the nation with solar on 2 million homes
3. NJ HAS GOAL OF 7,500 MW….  
   And, as Pat showed, NJ is committed to 7,500 MW from offshore wind turbines – this is about 1/3 of current annual electrical usage in NJ.
4. YOUR (TYPICAL) GHG EMISSIONS  
   In order to tackle your State, your City, or YOUR OWN carbon pollution, you need to KNOW YOUR CARBON FOOTPRINT.  
    This Pie Chart shows the 105 MMT GHG carbon “footprint” of residents of NJ. That is over 10 tons, per year, of heat-trapping pollution for every man/woman and child in NJ The largest source, by far, is transportation, shown in Green. That means nearly half of NJ emissions result from driving cars, and the various trucks serving resident needs. 21% is use of electricity; ~30% is heating homes and businesses with natural gas. The outlier at top right is NEGATIVE 8% carbon sequestration – carbon is absorbed by those areas that YOU preserve and protect, such as forests & marshland
5. MIDDLETOWN 2020 ENERGY PLAN GOALS  
   Pat and I created “Middletown for Clean Energy for environmental work. Bob Erickson, on our team, ported the NJ data down to city level by writing the MIDDLETOWN 2020 ENERGY PLAN. We based this on the NJ Energy Master Plan & related laws, AND we are fortunate that a NJ company called Sustainable Jersey sets the structure and work programs for Green Teams who can elect Sustainable Jersey GHG reduction actions in 450 NJ cities. We are now working with the administration in Middletown to include this new energy plan in the soon-to-be-revised Middletown Master Plan.
6. MIDDLETOWN ENERGY PLAN starts with the 10 tons/year PER-PERSON SHARE of the NJ total.

* You can do the same thing in your town, and results would look similar- just scale the bottom legend to your own city population
* The chart shows emission reductions, achieved in the year 2030, for 11 rank-ordered classes of ACTIONS.
* All these ACTIONS, together, will result in 38% city-wide emission reduction by 2030 and 90% emission reduction by the year 2050
* The top, dark green bar is the GHG REDUCTION from converting to 100% clean electricity by 2030. This is the most potent action (& can do this IMMEDIATELY) and will save 90,000 tons of carbon per year..
* The 2nd bar in dark blue is the reduction in vehicle pollution. Transportation is the biggest emission source, however, those fuel-guzzling SUVs will hang in for a long time. NJ Energy Master Plan assumes 100% of new cars are EV as of 2035. We project that only 25% of cars will be non-polluting by 2030. The GHG saving is about 50,000 tons/year in the year 2030
* The purple is NOTEWORTHY. The 2nd largest source of emissions is for heating by burning fossil fuel (primarily natural gas in NJ). We project that 25% of building heating will have switched from fossil fuel to electric heat pumps by 2030. The savings is about 30,000 tons/year.
* The dark brown shows savings from energy efficiency measures for all buildings. This costs little, and quickly pays back.
* A summary, FOR YOU PERSONALLY: the biggest hitters are: 1. Switch to renewable electric and convert your house to all-electric house: 2. Buy an electric car 3. Switch to heatpumps for your house heating and hot water tank 4. Fully insulate and seal your house.

1. What AM I TO DO??   
    There are multiple ways to switch to a renewable electrical supply: this has the greatest, quickest reduction of your carbon emissions. :  
   install rooftop solar – still a good deal, and solar prices continue to drop, although subsidies are slowly disappearing  
   OR – switch from your local electric utility to a supplier of choice- use my web site for selection of the best current deals, and you will get 100% renewable electricity at lower cost than your current utility.  
   OR – wait a couple of years and subscribe to(future) large patches of low cost “Community Solar” – presently in a 3 year trial  
   OR (BIGGEST REDUCTION)Ask your town to supply renewable electricity to all residents and businesses
2. Create a Rallying cry- just as we are doing in Middletown- to influence your town
3. NEW JERSEY RENEWABLE GOVERNMENT…  
    The legal name is Government Energy Aggregation. In other states, it is called “Community Choice” or “Community Power”. Your town becomes your electric supplier. The town hires an energy consultant, who shops for the lowest renewable electricity to supply the entire town.  
   ASIDE: we had partial success this year: our town asked for bids on a 2 year contract for renewable electricity for all city buildings. In June, 2020, all 80 municipal building accounts started receiving 100% renewable electricity, at a 10% electricity cost decrease! And they praised themselves with a BIG press release for earth day!   
   We are now asking Middletown:– hey -we residents and businesses want the SAME! Please provide renewable electricity, at lower cost, just as you did for your own municipal accounts
4. SWITCH TO PLUG-in ELECTRIC   
   Take advantage of state and federal rebates, and buy an electric or plug-in hybrid. Even without subsidies, prices for electric cars will drop below fossil fuel cars in maybe 4 years. Then recharge the EV with your household renewable electricity. You will have zeroed out more than half of your household total emissions!! Pat and bought a Toyota Prius hybrid. We have achieved almost 150 miles per gallon, over 29,000 miles of driving, and mostly charge the car from our house, electrified by Texas windpower.
5. OTHER CHANGES WE WILL SEE IN 2050  
   HERE IS OUR CRYSTAL BALL: By 2030 we will see many changes. By 2050, we will see all of these: building standards will be upgraded for 0 emissions. As Appliances and furnaces wear out, they will be replaced by electric heat pumps. All gas stations will be closed or converted to EV charging stations. We will have dramatically longer range, faster charging batteries. Plastic packaging will be cut back. And many (most?) people will have adopted plant-based diets.
6. In closing, which path will you choose? Oil and gas money, or our children’s future? Speak up, act and vote like your world depends on it
7. Because it does!!

Steve Miller [stevemiller@comcast.net](mailto:stevemiller@comcast.net) 10/10/2020 (please contact me to trade insights on explicit actions to reach 2030 and 2050 goals.)