Episode 56V E, June 23, 2024, Jeopardy RAWSEP, Bridges to clean energy, OK or not OK?: 1)Problems: Wood burning plus LPG Gas burning, 2)Problems: Wood burning plus (the bridge) Natural Gas burning, 3)Problems: Industrial Wood burning plus Industrial Coal Burning, 4)Solution: Heat Pumps without backup, 5)Less of a Problem: Least polluting Heat Pump backup, 6)Solutions: individual actions plus Industry Change.

Jeopardy.

Category 1: Problems: Wood burning plus LPG Gas burning,

Category 2: Problems: Wood burning plus (the bridge) Natural Gas burning,

Category 3: Problems: Industrial Wood burning plus Industrial Coal Burning,

Category 4: Solution: Heat Pumps without backup,

Category 5: Less of a Problem: Least polluting Heat Pump backup,

Category 6: Solutions: individual actions plus Industry Change,

Category 1, $200 Answer, Problems: Wood burning plus LPG Gas burning,

Compared to diesel or petroleum, LPG emits lower levels of CO2, CO, and particulates.

Category 1, $200 Question, Problems: Wood burning plus LPG Gas burning,

Is Liquid Petroleum Gas cleaner burning than diesel or petroleum?

Category 1, $400 Answer, Problems: Wood burning plus LPG Gas burning,

While still a fossil fuel, LPG burns more efficiently and produces fewer carbon emissions than wood, charcoal, or kerosene.

Category 1, $400 Question, Problems: Wood burning plus LPG Gas burning,

Is Liquid Petroleum Gas cleaner burning than wood, charcoal or kerosene?

Category 1, $600 Answer, Problems: Wood burning plus LPG Gas burning,

Liquid Petroleum Gas is both easy to store and transport.

Category 1, $600 Question, Problems: Wood burning plus LPG Gas burning,

Is Liquid Petroleum Gas easy to store and transport?

Category 1, $800 Answer, Problems: Wood burning plus LPG Gas burning,

Liquid Petroleum Gas is able to meet Africa’s clean cooking needs reliably and at scale.

Category 1, $800 Question, Problems: Wood burning plus LPG Gas burning,

Does Liquid Petroleum Gas meet many of Africa’s clean cooking needs reliably and at scale?

Category 1, $1,000 Answer, Problems: Wood burning plus LPG Gas burning,

LPG burning produces 3.2 times the energy as wood burning . (KJfKg is Kilojoule energy produced per Kilogram of Fuel Source)

Category 1, $1,000 Question, Problems: Wood burning plus LPG Gas burning,

What does LPG efficiency is 55,000 KJfKg versus Wood Burning efficiency 17,000 KJfKg mean?

Category 2, $200 Answer, Problems: Wood burning plus (the bridge) Natural Gas burning,

Wood burning emits 450 times the PM2.5 as (the bridge) fossil fuel Natural Gas burning.

Category 2, $200 Question, Problems: Wood burning plus (the bridge) Natural Gas burning,

Does wood burning emit more PM2.5 than the fossil fuel Natural Gas burning?

Category 2, $400 Answer, Problems: Wood burning plus (the bridge) Natural Gas burning,

If a back up to Heat Pumps is needed, the cleanest backup is probably a natural gas furnace.

Category 2, $400 Question, Problems: Wood burning plus (the bridge) Natural Gas burning,

Is natural gas burning the probable cleanest backup to Heat Pumps for home heating?

Category 2, $600 Answer, Problems: Wood burning plus (the bridge) Natural Gas burning,

A backup to Heat Pumps may not be needed, since Heat Pumps work to 40 degrees below zero.

Category 2, $600 Question, Problems: Wood burning plus (the bridge) Natural Gas burning,

Are natural gas generators always needed as backup to Heat Pumps for home heating?

Category 2, $800 Answer, Problems: Wood burning plus (the bridge) Natural Gas burning,

The cold weather heat pump challenge in 2024 declares as winners Heat Pump that reliably work down to 40 degrees below zero.

Category 2, $800 Question, Problems: Wood burning plus (the bridge) Natural Gas burning,

Is there a partnership with the U.S. Environmental Protection Agency (EPA), Natural Resources Canada (NRCan) and leading heat pump manufacturers?

Category 2, $1,000 Answer, Problems: Wood burning plus (the bridge) Natural Gas burning,

Heat Pumps are the wave of the future and completely free of emissions.

Category 2, $1,000 Question, Problems: Wood burning plus (the bridge) Natural Gas burning,

Why will any backups to Heat Pumps not be needed in the future?

Category 3, $200 Answer, Problems: Industrial Wood burning plus Industrial Coal Burning,

Answer 1 of 2: Wood burning PM2.5 emissions are not counted in each country in the World's Climate Goals.

Category 3, $200 Question, Problems: Industrial Wood burning plus Industrial Coal Burning,

Question 1 of 2: How is the scientifically debunked theory of Carbon Neutrality of Wood Burning used to ignore wood burning's PM2.5 emissions in each country in the world's Climate Goals?

Category 3, $400 Answer, Problems: Industrial Wood burning plus Industrial Coal Burning,

Answer 2 of 2: Wood burning PM2.5 emissions are not counted from Industrial Wood Burning (Biomass) plants in each country in the World.

Category 3, $400 Question, Problems: Industrial Wood burning plus Industrial Coal Burning,

Question 2 of 2: How is the scientifically debunked theory of Carbon Neutrality of Wood Burning used to ignore wood burning's PM2.5 emissions from Industrial Wood Burning (Biomass) plants?

Category 3, $600 Answer, Problems: Industrial Wood burning plus Industrial Coal Burning,

Answer 1 of 3: The scientifically debunked theory calculates that if a tree is planted in the place of a cut down, burned tree, it is as if the wood burning never happened, with zero PM2.5 and zero CO2 emissions, false accounting on paper.

Category 3, $600 Question, Problems: Industrial Wood burning plus Industrial Coal Burning,

Question 1 of 3: By what calculation is wood burning considered zero carbon emissions according the scientifically debunked theory of Carbon Neutrality of Wood Burning?

Category 3, $800 Answer, Problems: Industrial Wood burning plus Industrial Coal Burning,

Answer 2 of 3: The scientifically debunked theory doesn't take into consideration that a tree planted, in the place of a cut down, burned tree, takes decades or centuries to grow to the stature of the cut down tree, able to absorb the same amount of CO2 during photosynthesis, as the cut down tree.

Category 3, $800 Question, Problems: Industrial Wood burning plus Industrial Coal Burning,

Question 2 of 3: Why does the scientifically debunked theory of Carbon Neutrality of Wood Burning not explain why CO2 in the air would not increase when wood is burned?

Category 3, $1,000 Answer, Problems: Industrial Wood burning plus Industrial Coal Burning,

Answer 3 of 3: The scientifically debunked theory doesn't take into consideration that a tree planted, in the place of a cut down burned tree, at any size, never absorbs PM2.5, particulates of 2.5 micrometer size.

Category 2, $1,000 Question, Problems: Industrial Wood burning plus Industrial Coal Burning,

Question 3 of 3 : Why does the scientifically debunked theory of Carbon Neutrality of Wood Burning not explain why PM2.5 in the air would not increase when wood is burned?

Category 4, $200 Answer, Solution: Heat Pumps without backup,

Heat Pumps work down to 40 degrees below zero.

Category 4, $200 Question, Solution: Heat Pumps without backup,

Can a Heat Pump without backup work in cold climates during winter?

Category 4, $400 Answer, Solution: Heat Pumps without backup,

Heat Pumps can also work as Air Conditioners.

Category 4, $400 Question, Solution: Heat Pumps without backup,

Can a Heat Pump also work as an air conditioner?

Category 4, $600 Answer, Solution: Heat Pumps without backup,

Heat Pumps run on electricity and rural electricity has been available since after World War II, for over 75 years.

Category 4, $600 Question, Solution: Heat Pumps without backup,

Do Heat Pumps run on electricity?

Category 4, $800 Answer, Solution: Heat Pumps without backup,

Heat Pumps lower electricity monthly charges immediately upon installation.

Category 4, $800 Question, Solution: Heat Pumps without backup,

Do Heat Pumps run efficiently, reducing electricity monthly charges compared to previous utility bills?

Category 4, $1,000 Answer, Solution: Heat Pumps without backup,

Up to $8,000 Heat Pump rebates are being rolled out by states in 2024, based on a sliding income scale.

Category 4, $1,000 Question, Solution: Heat Pumps without backup,

Are there Heat Pump rebates up to $8,000 in 2024?

Category 5, $200 Question, Less of a Problem: Least polluting Heat Pump backup,

Wood burning is not a viable backup option for Heat Pumps because wood burning is the most polluting heating option.

Category 5, $200 Answer, Less of a Problem: Least polluting Heat Pump backup,

Is wood burning a viable backup option for Heat Pumps?

Category 5, $400 Answer, Less of a Problem: Least polluting Heat Pump backup,

In Africa, Liquid Petroleum Gas is used as a backup or replacement for wood burning, but better backup or replacements are available in more modernized areas of the world.

Category 5, $400 Question, Less of a Problem: Least polluting Heat Pump backup,

If Africa is early in the process of obtaining clean energy, can Africa still be a model for backup or elimination of wood burning, for more modernized areas of the world?

Category 5, $600 Answer, Less of a Problem: Least polluting Heat Pump backup,

In modernized countries of the world, if natural gas furnaces are already installed, they can serve as bridges to the clean energy of Heat Pumps, if Heat Pumps are not available to certain households.

Category 5, $600 Question, Less of a Problem: Least polluting Heat Pump backup,

Is a natural gas furnace the least PM2.5 polluting backup to Heat Pumps?

Category 5, $800 Answer, Less of a Problem: Least polluting Heat Pump backup,

Heat Pumps do not require a backup unless all electricity is shut down by Climate Change caused storms for several days in the middle of winter.

Category 5, $800 Question, Less of a Problem: Least polluting Heat Pump backup,

Do Climate Change caused storms sometimes contribute to loss of electrical power for Heat Pumps?

Category 5, $1,000 Answer, Less of a Problem: Least polluting Heat Pump backup,

Destruction of an electrical grid by storms caused by Climate Change can be slowed by use of Heat Pumps rather than much more polluting wood burning, which hastens Climate Change.

Category 5, $1,000 Question, Less of a Problem: Least polluting Heat Pump backup,

Do the CO2 and PM2.5 produced by wood burning contribute to causing Climate Change caused storms that could potentially destroy an electric grid?

Category 6 $200 Answer, Solutions: individual actions plus Industry Change,

One person can do two things at the same time: 1)stop burning wood at home and 2)ask industries to stop burning wood, and instead use the cleaner energy sources of wind, solar and geothermal.

Category 6 $200 Question, Solutions: individual actions plus Industry Change,

If one person stops burning wood at home, is that enough to help slow Climate Change?

Category 6, $400 Answer, Solutions: individual actions plus Industry Change,

Stopping wood burning residentially does not just stop sickening the family within the home, but also stops sickening the near neighbors of indoor residential wood burners.

Category 6, $400 Question, Solutions: individual actions plus Industry Change,

Does stopping wood burning residentially lessen the risk of sickening your own family?

Category 6, $600 Answer, Solutions: individual actions plus Industry Change,

Stopping wood burning residentially also lessen the risk of sickening all the people in your neighborhood.

Category 6, $600 Question, Solutions: individual actions plus Industry Change,

Does stopping wood burning residentially lessen the risk of sickening your neighbors, near and far?

Category 6, $800 Answer, Solutions: individual actions plus Industry Change,

If you stop burning wood, you can serve as an example for other people to stop burning wood.

Category 6, $800 Question, Solutions: individual actions plus Industry Change,

Can you be a role model by stopping burning wood?

Category 6, $1,000 Answer, Solutions: individual actions plus Industry Change,

Tell other people that in addition to asking industries to stopping burning fossil fuels and stopping burning wood (biomass), individuals can contribute to clean air, increase Public Health and slow Climate Change by stopping burning wood indoors residentially.

Category 6, $1,000 Question, Solutions: individual actions plus Industry Change,

What can you tell other people to do, now that you know that wood burning emits 2.8 times the PM2.5 as the fossil fuel coal burning, and that wood burning emits 450 times the PM2.5 as the fossil fuel natural gas burning? Wood burning emits 90% PM2.5, particulate matter of 2.5 micrometer size, the perfect size to infiltrate the human lung, setting off a cascade of human health problems and early deaths.

Double Jeopardy if no action is taken.