

# Climate Change What Can I Do?

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# My Background

- An engineer with Environmental & Social Conscience
- India Development Service (1988-90): President and on Board of IDS
- India Study Circle 1991-93 – Overall Issues
- Earth Summit Network (1991-93), Chicago, Non-Indian Groups – Global Environment & Develop.
- SAGAR – South Asia Group for Action & Reflection – Vison of South Asia, Indo-Pak
  - - George Palamattam
- IDCA (2005-Present) – Solar Lights Project, DRI, Chitrakoot – Jiwan Sondhi, Dr. Prakasam Tata
- IDCA - Climate Change & Renewable Energy Talks
- Retired April 2016 – 300 Years with Diesel Locomotive Company - EMD
- Climate Change & Clean Energy Activities in Illinois
- Solar Energy – Practical & Affordable Solar for Home & Business
- PAGRI – Punjab Action Group for Rejuvenation & Implementation, 2016
- Books, Rethinking Progress, Personal Climate Change Handbook, etc

# What Can I do ?

- TWO OPTIONS

- OPTION #1 - POLITICAL

- Get active politically in the US:

- Help favorable candidates get elected
- Help unfavorable candidates get defeated
- Help Clean Energy initiatives – like Illinois

- OPTION #2 – REDUCE MY CARBON EMISSIONS

- Get a Solar System installed at my house or business
- Almost Eliminates your electricity bill
- Big incentives reduce cost to 40% of the Cost of System

# Outline of My Talk

- Devastation already taking place – Globally, US and India
- Devastation Projected to take place – Globally, US & India
- What can I do ? Two Options
- Get active politically
- Get Roof Top Solar System
- Conclusion

# Personal Climate Change Handbook

## Hari Lamba

- Provides update on global situation
- Paris Agreement, history and status
- Gives all the options that you can do !
- Seven Sections describing Solutions
- Imagines a Post Global Warming World
  - What the world will look like after we solve problem of Global Warming
- Order from Amazon, Create Space or Barnes & Noble

# Global Warming Devastation - USA

- ALREADY
- Worsening hurricanes, tornadoes, coastal storms, torrential rains, flash floods, massive flooding, melting glaciers, and wildfires
- FUTURE
- The above will worsen further – add Sealevel rise
- 2/3rds of Florida will be under water by 2,100
- Many coastal cities will be under water

# Global Warming Devastation - World

- ALREADY
- Worsening Cyclones, many nations submerged by flooding, coral reefs are dying,
- NOAA – 2016 summer – worse heat waves
- FUTURE
- Worsening heat waves, cyclones, droughts, coastal storms, rising sea levels, melting of Antarctic and Arctic Ice sheets, disruption of agriculture, increasing environmental refugees

# Global Warming Devastation - India

- ALREADY
- Torrential Rains leading to flash flooding
- Mumbai – 2005, Ladakh – 2010, Uttarakhand – 2013
- Drought of 2016 – really bad – 300 million +
- FUTURE
- Will get hotter and hotter – more drought,
- More flash floods, landslides & mudslides
- Worsening cyclones



# Paris Agreement

- 170+ Nations agreed to Voluntary Nationally Determined Contributions (NDMCs)
- Still only limits temperature rise to 3.5 degrees C
- 55 Nations and those with 55% of global emissions have to ratify – then it enters into force
- Looks good for ratification – US & China are on board, India has agreed to 100 GW of Solar
- A Trump presidency would derail all of that
- Apply pressure on all governments to comply

# Some Adaptation Thoughts for India

- Main problems are heat, drought & flash floods
- 300 Million adversely people affected by drought now
- So – build Heat shelters everywhere
- Need massive effort for drought relief, followed by massive efforts to drought proof the country
- Build large structures to mitigate flooding, harvest water (on a big scale), protect Himalayas and hill areas from flash flood damage and land/mud slides.

# Climate Rally in Springfield Thursday, April 21



October 2014

Global Warming & Poetry



#CLEAN  
WAUKEGAN

Clear



LOVE OUR  
EARTH  
ILLINOIS  
CARES

WAUKEGAN  
EL MEDIO  
AMBIENTE

## Option # 2 – Invest in Roof Top Solar

- **FOSSIL FUEL BASED ELECTRICITY GENERATION HAS HIGH CARBON EMISSIONS**
- **COAL IS THE WORST**
- **PETROLEUM – OIL IS NEXT**
- **NATURAL GAS STILL HAS INDIRECT AND DIRECT EMISSIONS**
- **A BIG PART OF YOUR OWN CARBON EMISSIONS IS BASED ON YOUR ELECTRICITY USE**
- **WITH YOUR SOLAR SYSTEM, WITH SMALLER CONTRIBUTION, END WITH ZERO EMISSIONS**

## **Option # 2 – Invest in Roof Top Solar**

- **CAN ALMOST ELIMINATE YOUR ELECTRIC BILL**
- **With incentives you pay only 35-40% of the cost**
- **Get your money back in 5-6 years**
- **After that, there is no net cost for electricity**
- **About a 8-13% rate of return on Investment!\***
- **\*Includes 30% federal tax credit, Solar Renewable Energy Certificates (about another 30%) & earnings from sale of power to utility.**
- **Utility still charges distribution and connection charges**
- **Solar System makes both Environmental and Financial sense !**

# ROOF TOP SOLAR – Contd.

- Example of a Roof Top Solar System



# How You Can Get Your Solar System

- **SIMPLE**
- **All I need is your latest monthly Electric Bill and your address.**
- **My contractor will size a system equal to your consumption**
- **He will develop a proposal for you free of cost.**
- **I will stop by and go over details with you**
- **If you are convinced, then Contractor will proceed to help you**



# Getting Your Solar System - Process

- **Invest in Solar System with Contractor**
- **Following first year you get 30% Federal Tax Credit**
- **Then, each year, for each MWH of electricity you generate, you get money back – Solar Renewable Energy Certificate (SRECs - money of Illinois Fund) – over five years**
- **SRECs are about another 30% of the cost.**
- **Utility installs a Smart Meter that monitors energy going both ways. They pay you for what you feed back to the grid**
- **Future – less electricity costs – big electricity earnings (8-13% investment rate of return)**

# Solar System Example

- **For small 2.5 kW Solar System, say cost is \$ 10,000.**
- **First following year you get back \$ 3,000. as Federal tax Credit**
- **Over Five years as you produce Electricity, you get back about another 30% - about another \$ 3,000 - SRECs**
- **Your net cost is only \$ 4,000.**
- **Your electricity costs have been avoided, and instead you earn thru savings and Utility Credits**
- **On a net basis, your \$ 10,000 earns 8-13% return on investment – you cannot get that anywhere else these days**

# AFFORDABLE SOLAR ENERGY

## Affordable Solar Energy is Here !

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# CONCLUSION

- **Devastation is already here! Problems will only get worse. Every time you have torrential rain and/or flash floods, it is Global warming!**
- **Paris Agreement gives hope - Get Politically active in US**
- **Do yourself a big favor – Get your Solar System !**
- **You'll be happy that you are doing your part and are permanently reducing your Carbon emissions, as you sit around.**
- **Thank you!**