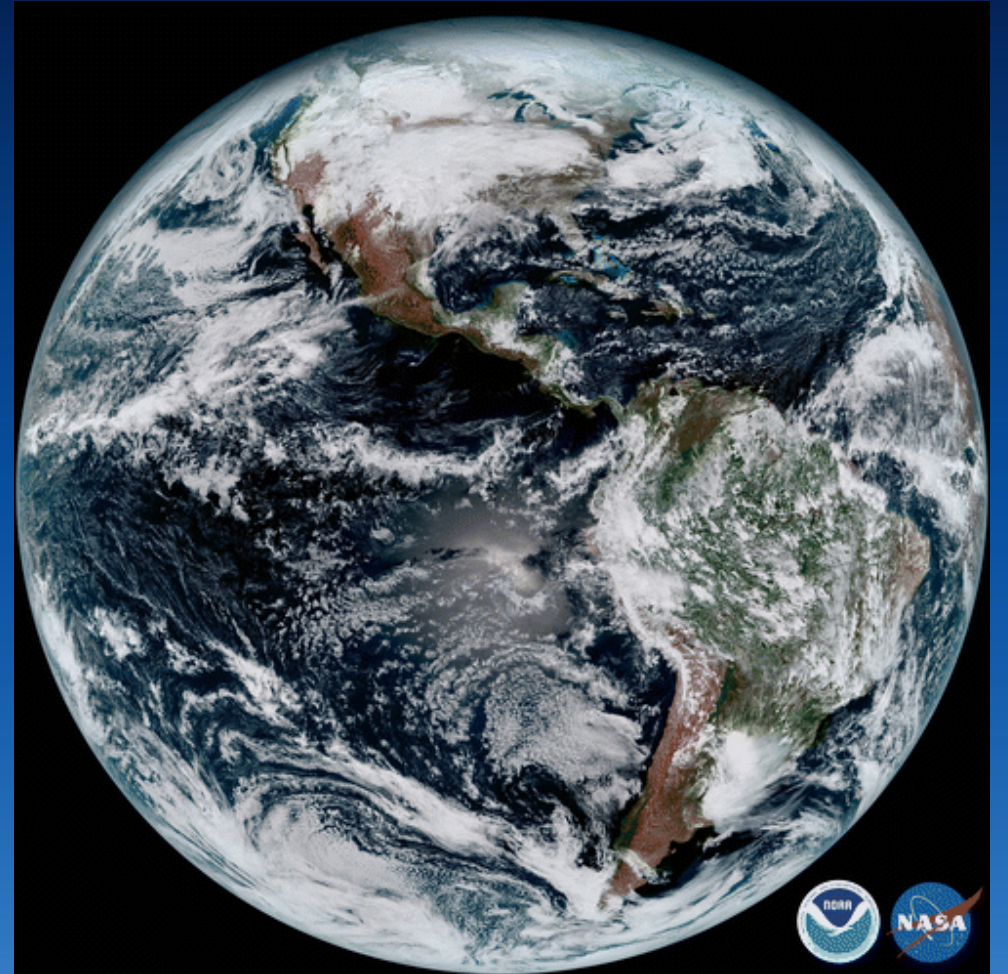


# Projects underway to slow or halt Climate Change



UNITED NATIONS  
**PARIS CLIMATE  
AGREEMENT**  
SIGNING CEREMONY  
— 22 APRIL 2016 —



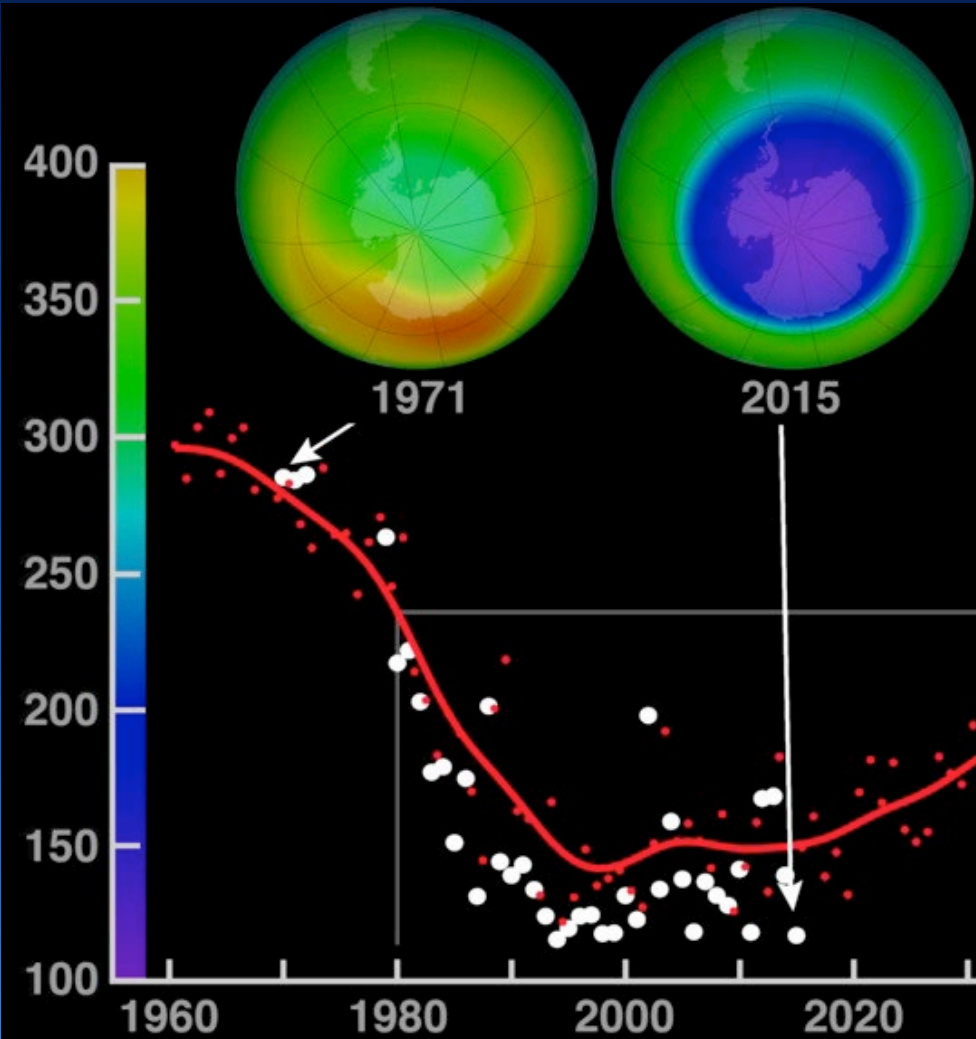
Goal: to limit global warming to below 2 degrees Celsius (1.8 °F), compared to pre-industrial levels, preferably to 1.5 °C (3.6 °F).

*We've succeeded before ....*

# Montreal Protocol

1987 United Nations agreement to limit the production of ozone-depleting chemicals.

Since then, 197 countries and the European Union have ratified the binding treaty, and CFC levels have steadily declined in the atmosphere.



# Project Drawdown

Project Drawdown is a research and communication organization that ranked the 100 most substantive, existing solutions to address climate change.

**Drawdown** is the point at which levels of greenhouse gases in the atmosphere stop climbing and then steadily decline, ultimately reversing global warming.

TOP SEVEN			TOTAL ATMOSPHERIC CO2-EQ REDUCTION (GT)
Rank	Solution	Sector	
1	Refrigerant Management	Materials	89.74
2	Wind Turbines (Onshore)	Electricity Generation	84.60
3	Reduced Food Waste	Food	70.53
4	Plant-Rich Diet	Food	66.11
5	Tropical Forests	Land Use	61.23
6	Educating Girls	Women and Girls	59.60
7	Family Planning	Women and Girls	59.60

**NOTE!**  
Actions 3 and 4 are easy for everyone to undertake

<https://www.drawdown.org/>

# #1 Refrigerant Management

Every refrigerator and air conditioner contains chemical refrigerants that absorb and release heat to enable chilling. Refrigerants, specifically CFCs and HCFCs, were once culprits in depleting the ozone layer. Thanks to the 1987 Montreal Protocol, they have been phased out.

BUT –  
HFCs, the primary replacement, spare the ozone layer, but have **1,000 to 9,000 times greater capacity to warm the atmosphere than carbon dioxide.**

Through an amendment to the Montreal Protocol, the world is phasing out HFCs—starting with high-income countries.

This is an expensive but key strategy for curbing climate change.

# #2 Onshore Wind Farms



Onshore wind turbines generate electricity at a utility scale, comparable to power plants. They replace fossil fuels with emissions-free electricity.

The Alta Wind Energy Centre in California is the largest wind farm in the United States and produces 1,550MW.



Gansu Wind Farm – China – worlds largest wind farm largest - 20,000 megawatts

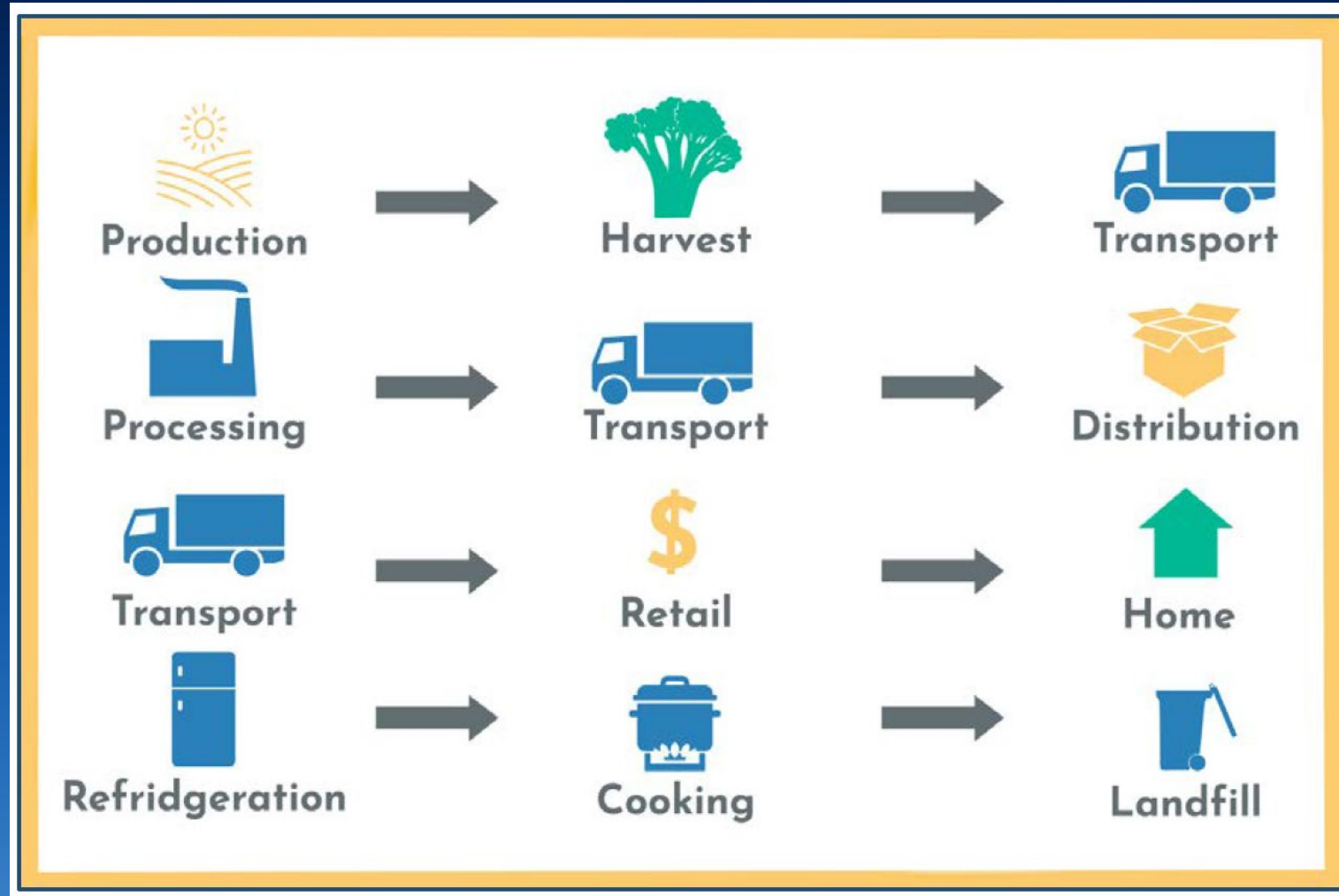
# #3 Eliminate Food Waste

If food wastage were a country, it would be the third largest emitting country in the world!



Roughly a third of the world's food is never eaten, which means land and resources used and greenhouse gases emitted were unnecessary.

# A Typical Food Supply Chain has Multiple Steps



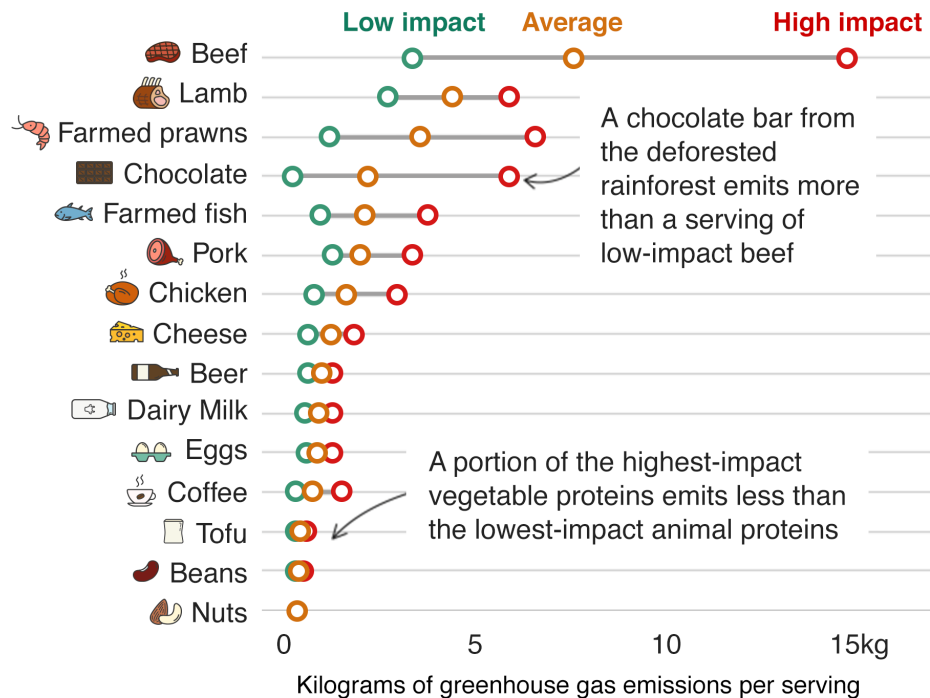
Greenhouse gases, (carbon dioxide, methane, and nitrous oxide) are produced at each step



# #4 Plant Rich Diet

**Beef has the biggest carbon footprint - but the same food can have a range of impacts**

Kilograms of greenhouse gas emissions per serving



If cattle were their own nation, they would be the world's third-largest emitter of greenhouse gases.

Source: Poore & Nemecek (2018), Science



Since solar and wind energies are already cheaper than fossil fuels and they work at the scales necessary to power the world, there is no reasonable excuse for not moving aggressively to a more sustainable energy future.

# Solar Farms are getting bigger & more common



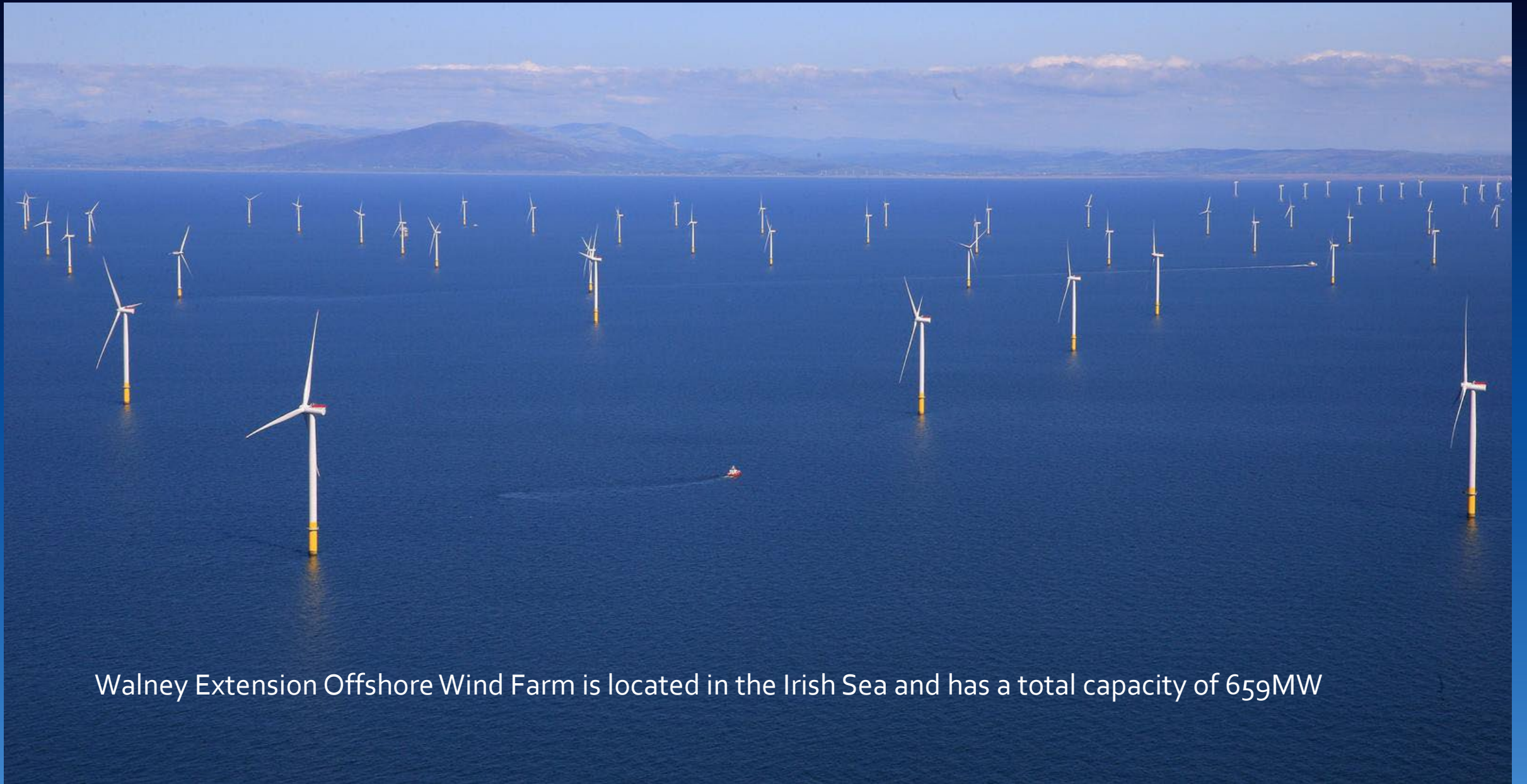
20-megawatt solar project in Dane County WI is providing clean energy to the UW-Madison, local businesses and governments.

74.5 megawatts  
(491 acres)  
at KSC!



Florida Power and Light's (FPL) 74.5 megawatt solar site, spanning 491 acres at NASA's Kennedy Space Center in Florida.





Walney Extension Offshore Wind Farm is located in the Irish Sea and has a total capacity of 659MW

# IPCC 6<sup>th</sup> Report (2022 & 2023)

The Intergovernmental Panel on Climate Change (IPCC) urges countries and individuals enact the following to avoid the worst of Climate Crisis ...

- Stop methane emissions
- Stop deforestation
- Restore degraded land
- Change what we eat
- Adapt Renewable Energy
- Use energy more efficiently
- Stop burning Fossil Fuels
- **ACT NOW**

# The U.S. Inflation Reduction Act – 2022

*The Inflation Reduction Act was passed in August 2022 and includes \$369 billion in funding to tackle climate change and cut climate pollution by 40 percent (from 2005 levels) by 2030.*

## **The Inflation Reduction Act includes:**

- Deficit reduction (to fight inflation)
- Lower energy costs, cleaner energy production, and reduced carbon emissions by roughly 40 percent by 2030
- Allows Medicare to negotiate drug prices and caps out-of-pocket costs
- Lowers health care premiums for millions of Americans
- Increases the corporate tax to 15%



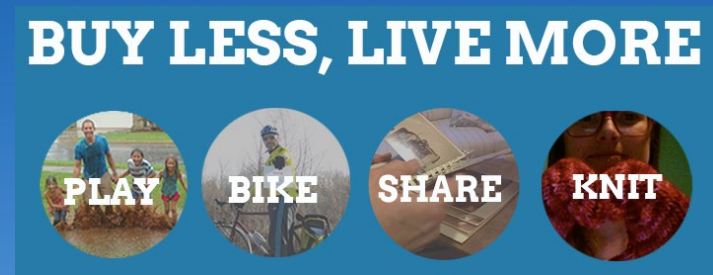
# There are LOTS of co-benefits from reducing carbon footprint ...



Active transport saves \$\$  
& improves health



*Plant-based  
Diets are  
Healthier!*



# Climate Change – summary points

1. It's real
2. It's us (human caused)
3. Experts agree
4. It's bad (harmful to humans)
5. We have solutions that are:
  - Technically feasible.
  - Economically affordable.
  - Politically viable.