

# Climate Policy: What and How?

## Module 12

# Climate Change Resilience

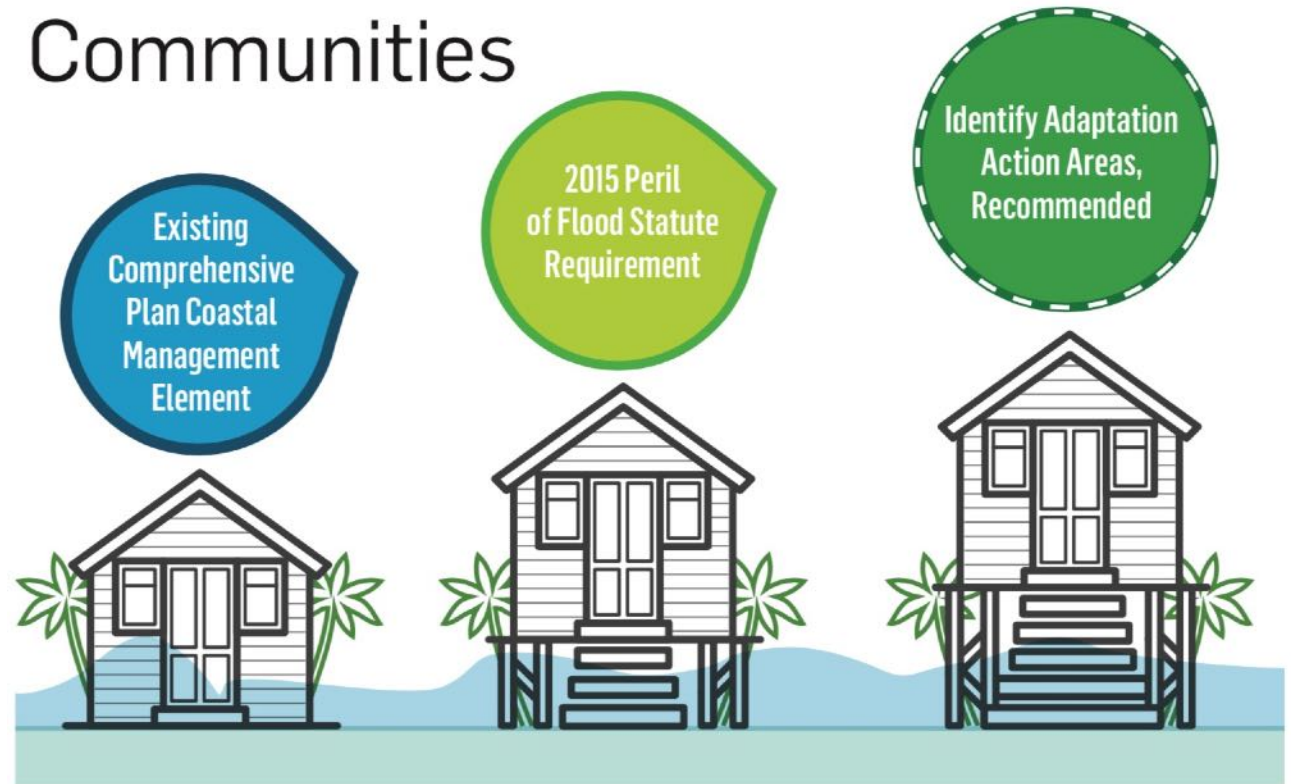


- **Mitigation**
  - Preventing damaging climate change by reducing GHG emissions and enhancing sinks
- **Adaptation**
  - Preparing for impacts & protecting the vulnerable

# Adaptation

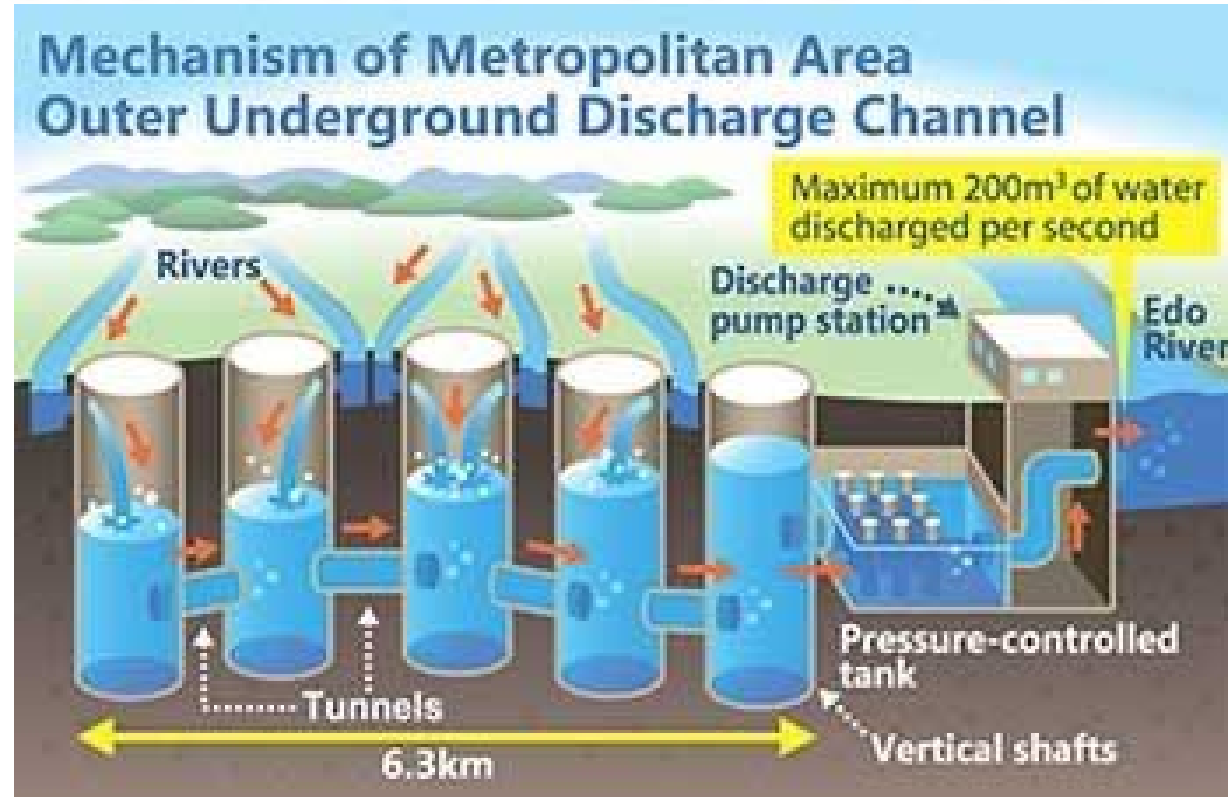
- **Prepare** for climate impacts to natural, social, and economic systems
- **Protect** vulnerable people, infrastructure, and ecosystems
- Build **capacity** to recover and respond
- Especially important at **local** level

## Adaptation Planning Steps for Local Florida Communities



# Adaptation Policies

- **Physical infrastructure** to prevent harm
- Zoning & development permits for **hazard zones** (floodplains)
- **Building codes** that protect against fire, flood, heat waves
- **Public health** policies to prevent climate-related disease





# Mitigation

- Promote and incentivize **energy efficiency**
- Low-carbon and non-carbon **energy supply**
- **Agriculture, forestry**, and land use changes
- Prioritize **non-CO<sub>2</sub> emissions** with high global warming potential (CH<sub>4</sub>, N<sub>2</sub>O, SF<sub>6</sub>, HFCs)



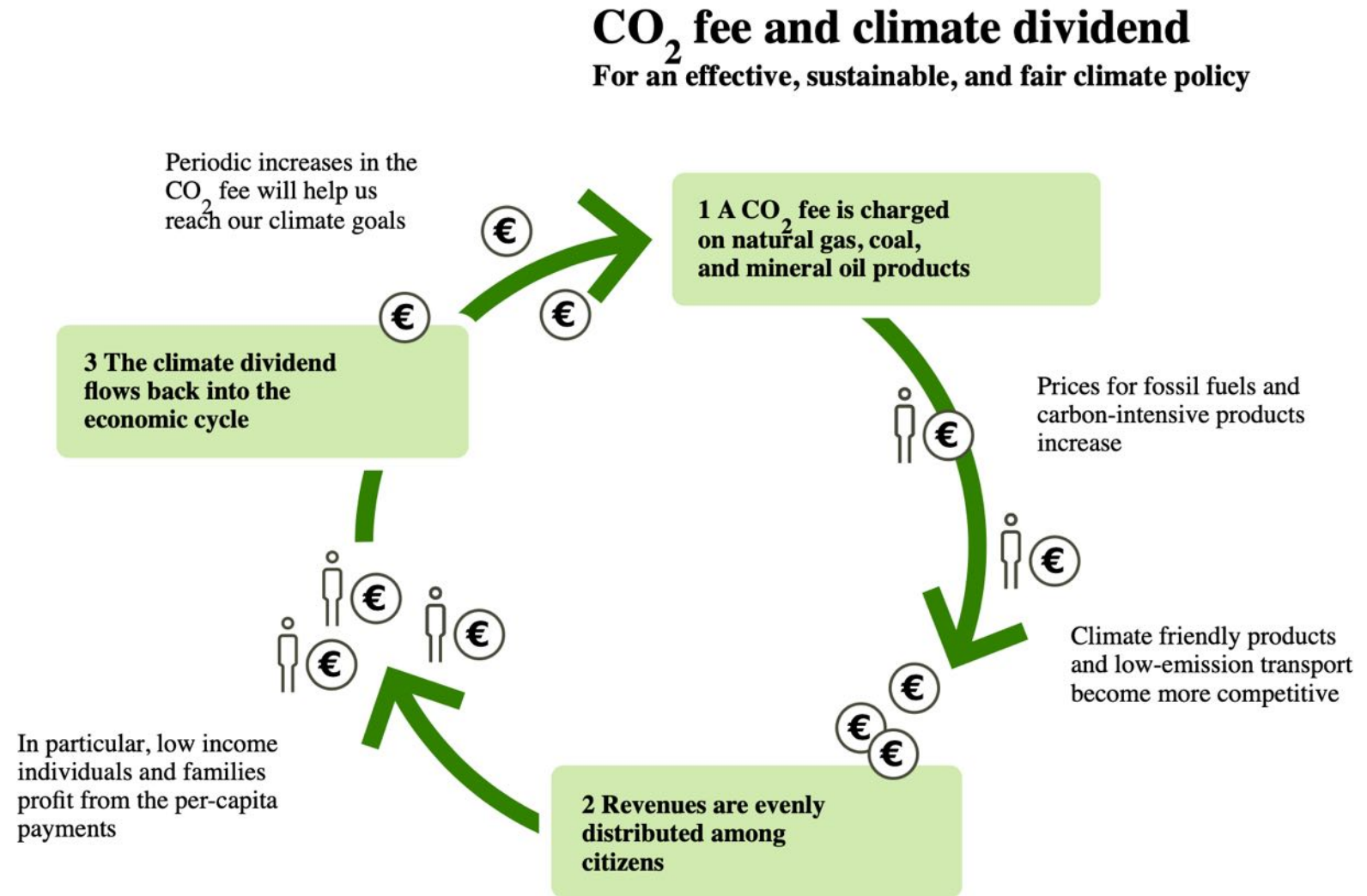
# Mitigation Policies

- **Carbon pricing**

- Carbon tax & rebate
- Emission Cap & Trade
- International Trade

- **Mandates & Regulations**

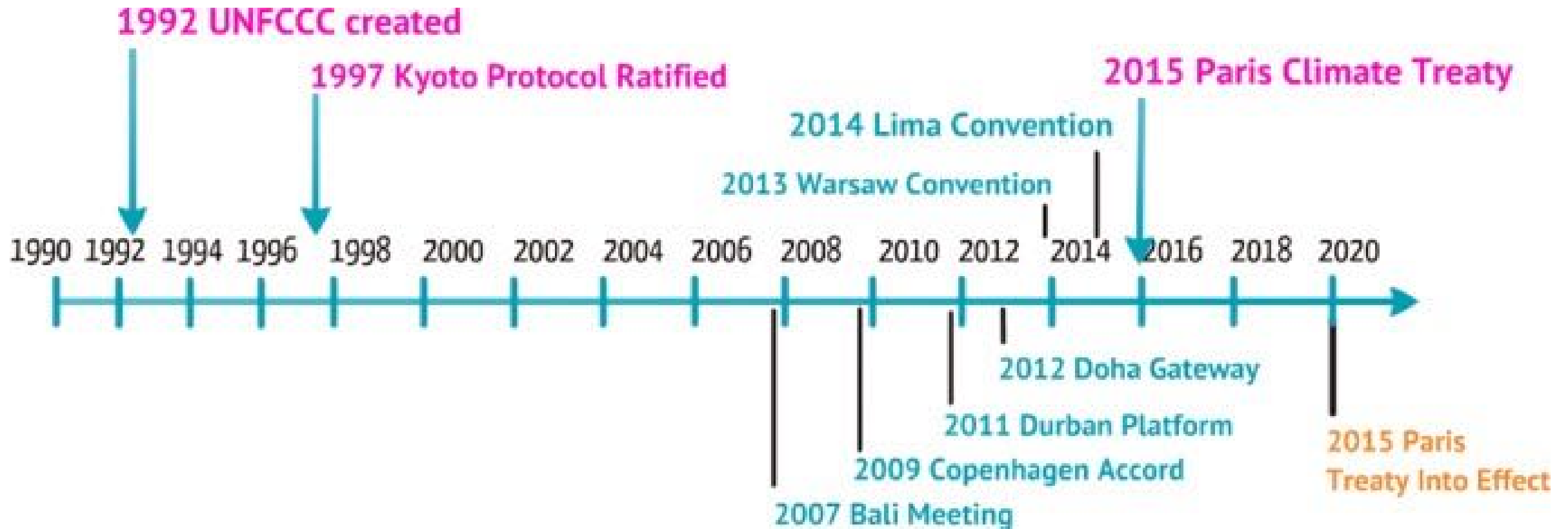
- Clean energy standard
- Automobile standards
- Public transit
- Building codes



# **International Climate Policy**

# History

## United Nations Framework Convention on Climate Change (UN FCCC)





# UN FCCC

- **Binds 194 countries**, almost every nation in the world
- **GOAL:** stabilize greenhouse gas concentrations "at a level that would **prevent dangerous anthropogenic (human induced) interference with the climate system.**"
- Recognizes responsibility of developed countries to lead the way



- Supports **climate action in developing countries with new funding** from richer countries
- Regular **reporting & assessment**
- Program of international **conferences of parties (COPs) every 1 and 5 years**

# Kyoto Protocol (1997)



Emission cuts & financial aid  
to developing countries

Emission Cuts Only

- Has the force of international law (**binding treaty**)
- 192 parties
- **Reduce GHG emissions 5% below 1990 by 2012, 18% by 2020**
- **Emissions Trading System**
- **Clean Development Mechanism (richer countries pay poorer countries not to emit GHG)**
- **Never ratified by US**

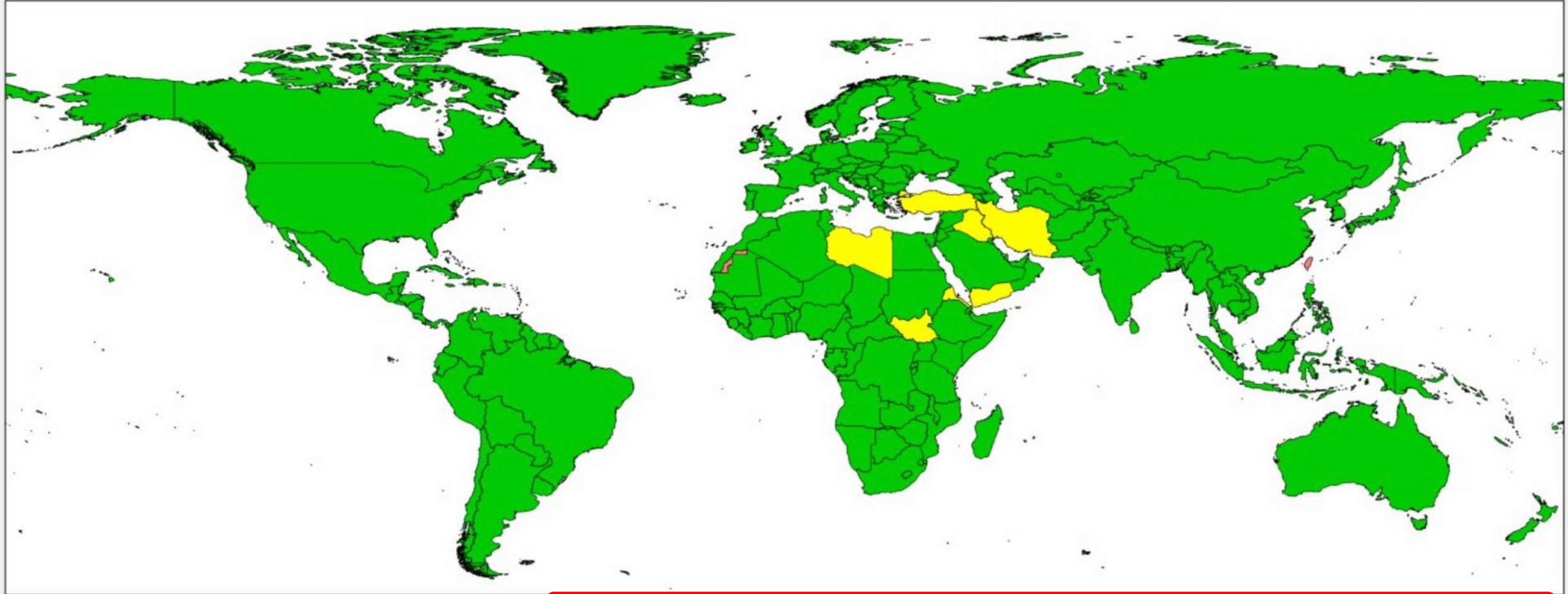
# Paris Agreement (2015)



- **Not binding!** Independent Nationally-Determined Contributions (voluntary NDCs)
- **Limit global warming to “Well below 2 C above preindustrial”**
- Limit to 1.5 C if possible
- “Stocktaking” every 5 years with **NDCs ratcheting down over time**
- **Adaptation & Resilience**
- **Financial & technical support for developing countries**



# Status of the Paris Agreement (February 2021)



- Signed and Ratified
- Signed but not yet Ratified
- Not Signed
- Non-member / Ineligible

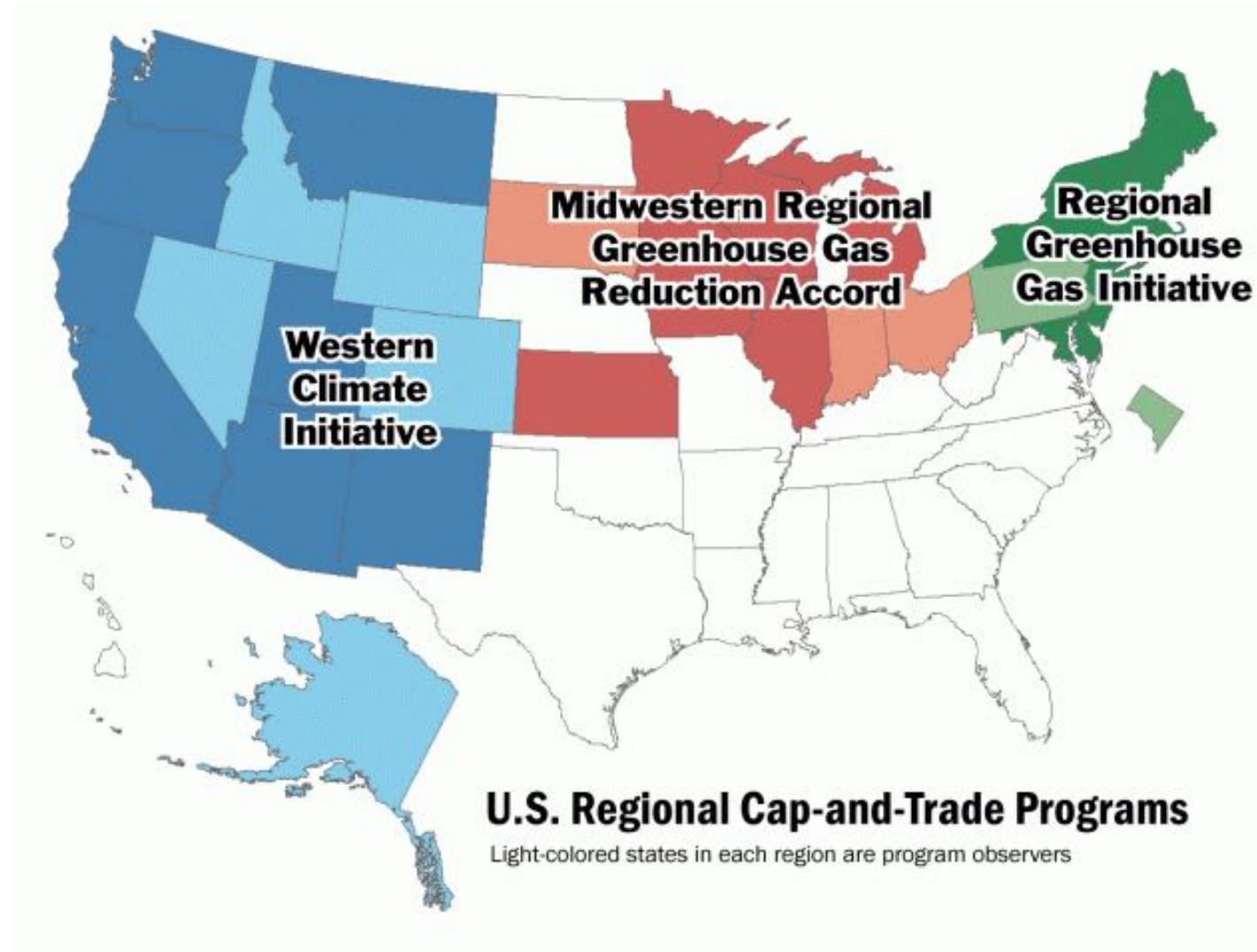
N	GHG Emissions	Population	Fossil Fuel Reserves
189	96.5 %	96.3 %	85.3 %
7	2.8 %	3.4 %	14.7 %
0	0.0 %	0.0 %	0.0 %
*	0.7 %	0.3 %	0.0 %

# **Regional, State & Local Climate Policy**



# Regional Climate Policies

- Regional Greenhouse Gas Initiative (RGGI)
  - 10 NE US States
  - **Reduce Electricity Emissions 30% by 2030**
- European Union Carbon Market
  - Slowly-falling EU-wide emissions cap
  - Emissions permits granted
  - **Permits traded like stocks or bonds (mixed success)**

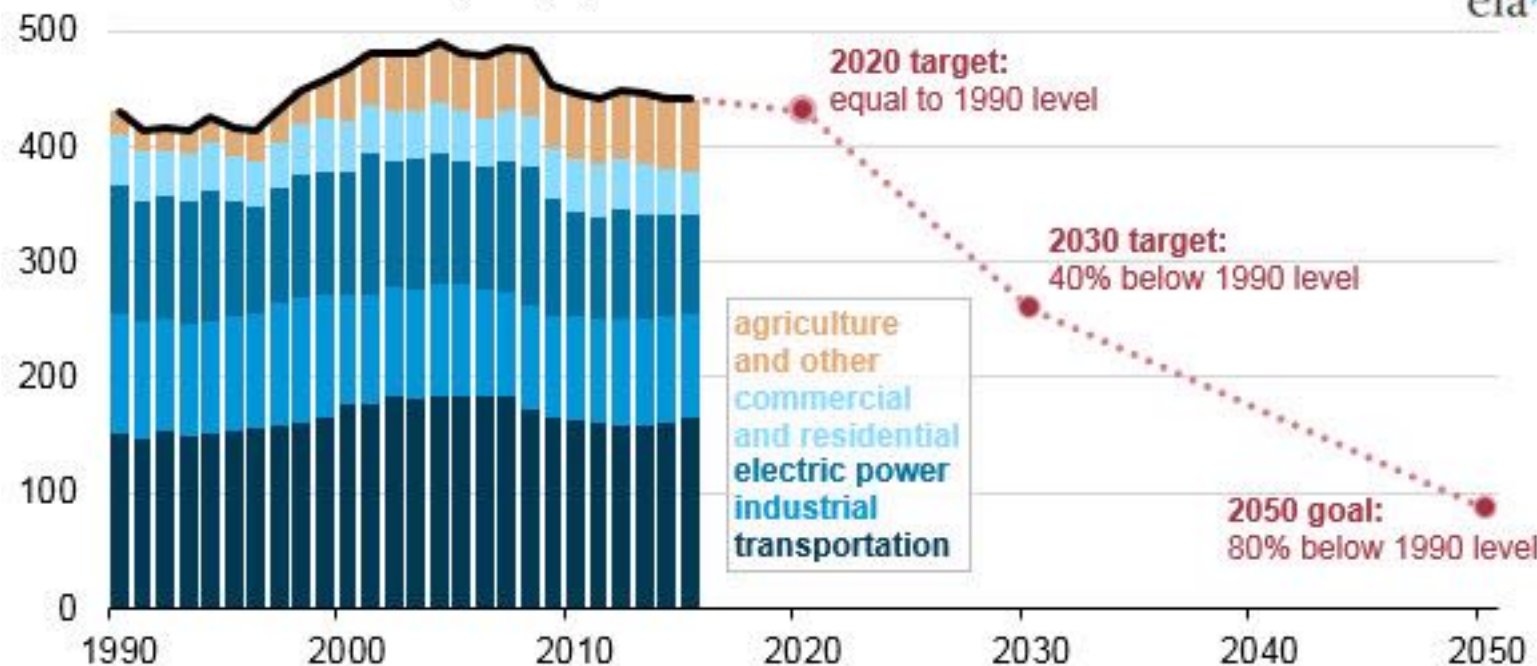


# California

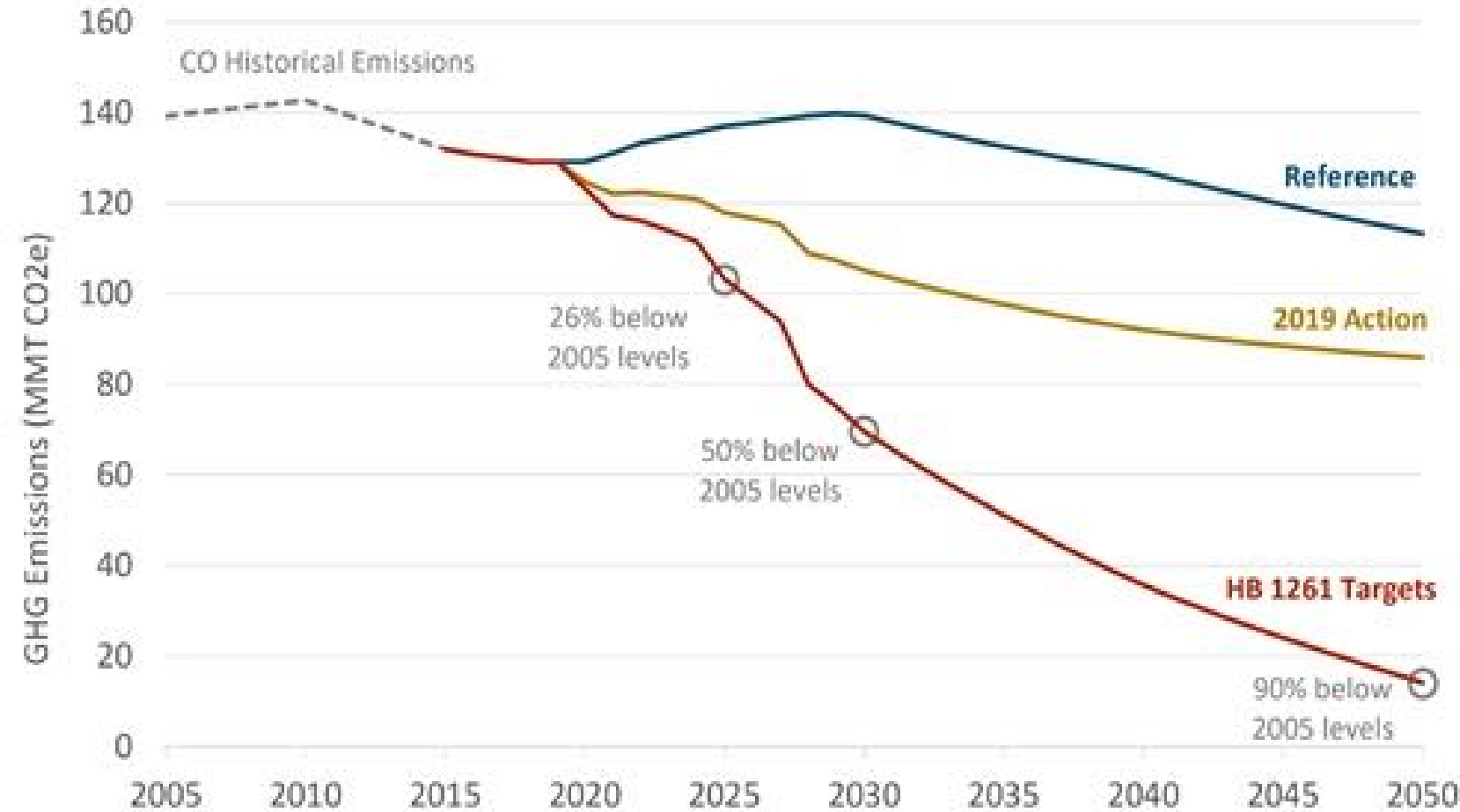
- Aggressive **regulations** for power, automobiles, efficiency, refrigeration, renewable electricity
- **Cap & Trade** system with a market for tradable emissions permits
- **100% carbon-free electricity required to by 2050**



California greenhouse gas emissions by sector (1990-2015) and targets through 2050  
million tons carbon dioxide (CO<sub>2</sub>) equivalent



# Colorado



- Historically reliant on **coal & gas**
- New “roadmap” (2020) targets **50% cuts by 2030**, **90% by 2050**
- Governor negotiating with stakeholders
- **Targets not yet binding by law**

# Fort Collins Climate Program

Down 7% since 2005

Down 28% per capita since 2005

Last updated 3.10.2021



**Emissions Down**



**Electricity**

(46% of inventory)

**EMISSIONS DOWN**

Emissions have decreased 17% since 2005



**Ground Travel**

(21% of inventory)

**EMISSIONS UP**

Emissions have increased 6%



**Natural Gas**

(22% of inventory)

**EMISSIONS UP**

Emissions have increased 23% since 2005

- Climate Change Planning **since 1999**

- 2005 Emissions Targets

- **Cut 20% by '20**
- **Cut 80% x '50**

- 2015 Emissions Targets

- **Cut 80% x '30**
- **Cut 100% x '50**

- **100% Clean Power by 2030**

- Climate **Resilience**

- Prosperity & **Justice**

Where are we going?  
**CLIMATE GOALS**

