

Can We Get to 2050? Or The American Dream Is A Planetary Nightmare



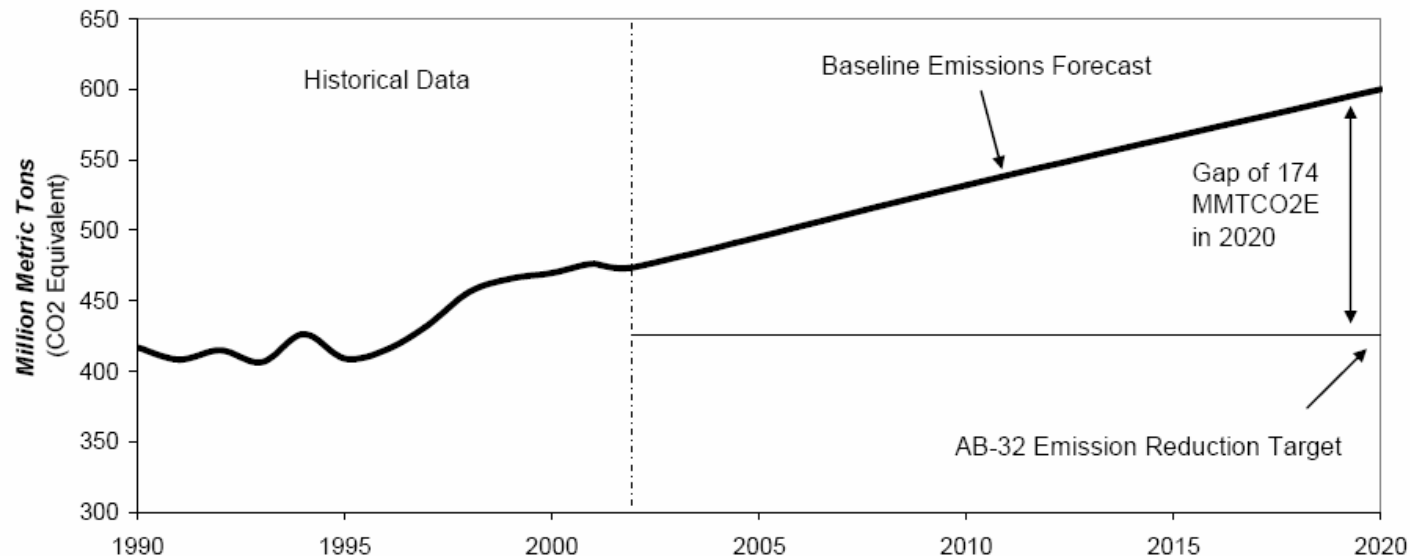
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Disclaimer: Jim Lazar is not representing ANY of his clients at this meeting. All opinions expressed are strictly his own.

Two Targets

- **California has set two ambitious targets for greenhouse gas reduction:**
 - **AB 32: Reduce statewide emissions to 1990 levels by 2020**
 - **Governor's Executive Order: Reduce emissions to 80% below 1990 levels by 2050**
- **The other Western states have comparatively meager goals.**

Figure 1. California Carbon Dioxide Emissions
(Million Metric Tons CO₂ Equivalent)

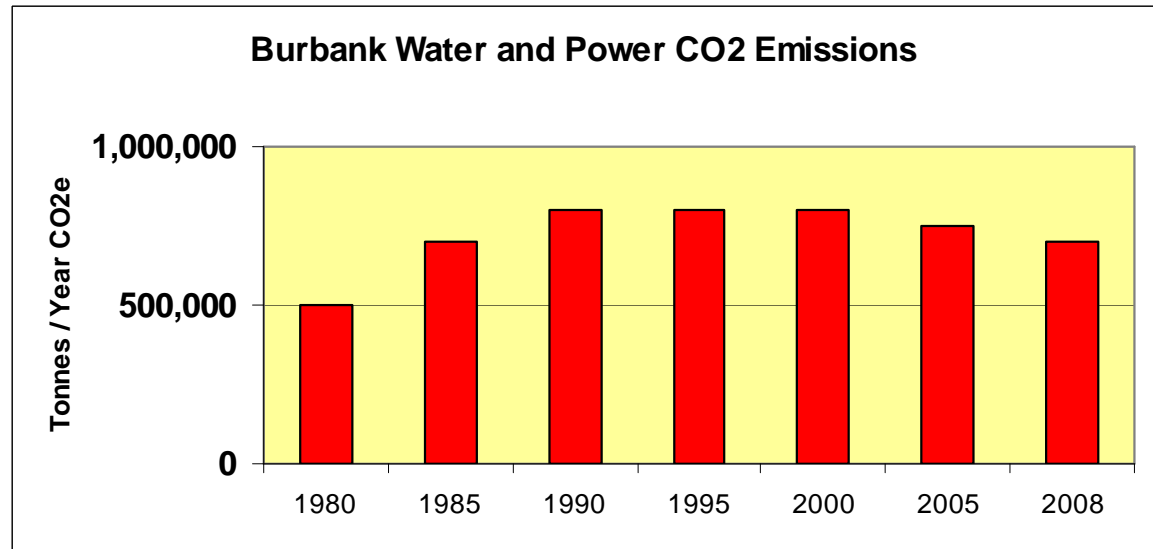


Sources: **Historical Data**: Gerry Bemis and Jennifer Allen, "Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2002 Update", June 2005.

1990 by 2020: Yes We Can!

- **Yes, we can meet this goal.**

- Many California electric utilities already have: Burbank, LADWP, among others.



- Natural gas utilization technology is falling behind.
- Transportation sector is a much larger challenge, but this goal can be met with ridesharing, transit, and telecommuting.
- Agriculture, forestry, aviation, and fisheries are all responding to high fuel costs.

Simple Utility Tools To Meet The 2020 Target

- Saturation utility conservation programs:
Forget the co-pay.
- Retire coal plants at the end of their current lifetimes, and build renewables.
- Appliance and building codes that press against the state-of-the-art.
- Use hydro resources more effectively
- Distribution system improvements.
- It's gonna take some money!



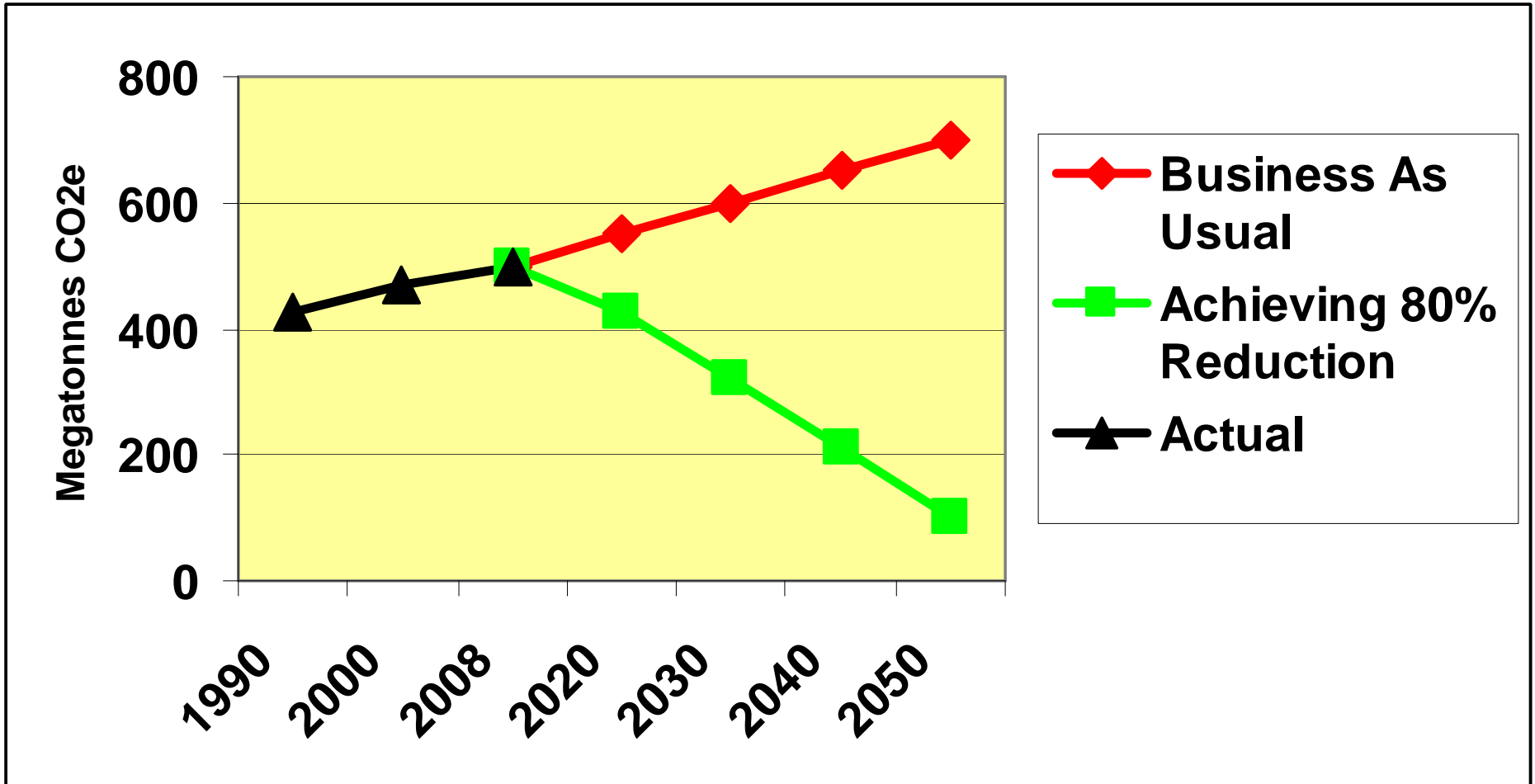
Transportation Tools to Meet 2020

- Transit passes for all employees
- No more “free” parking
- Pay-as-you-drive insurance
- Organized rideshare matching.
- Limit SOVs and Trucks on-peak
- Walking School Bus

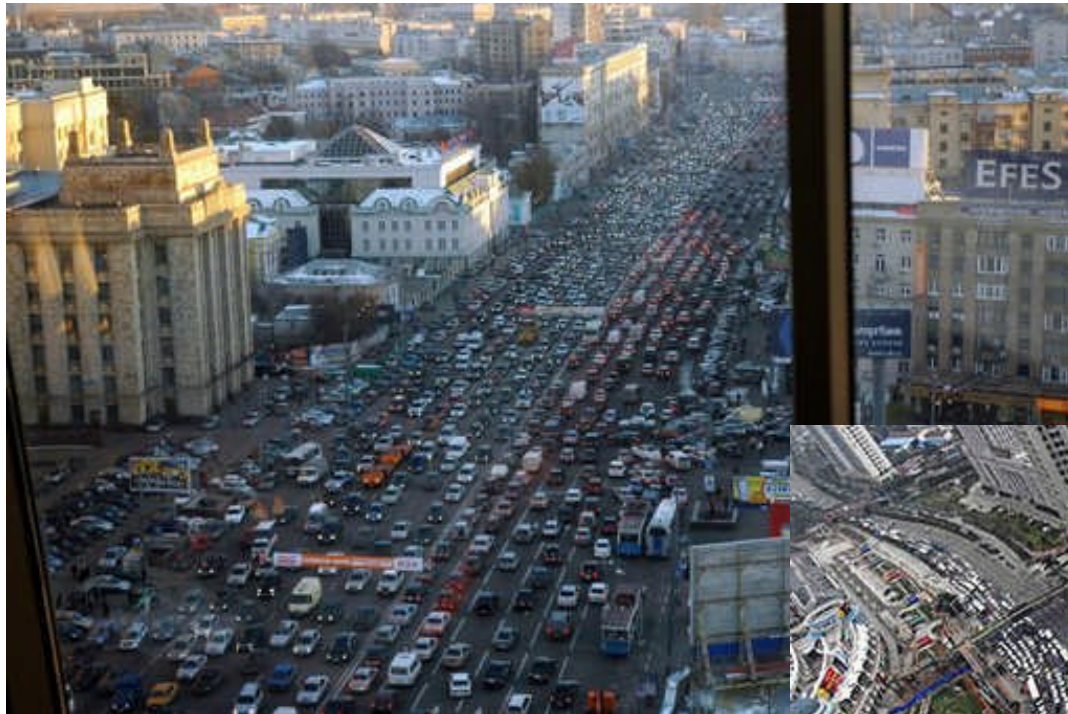


Achieving 80% Reduction by 2050

This is gonna be harder.



**80% Below 1990 by 2050
This one's gonna be harder.**



**We've built cities
that are unlivable.**



**80% Below 1990 by 2050
This one's gonna be harder**



Our subdivisions are energy pigs.

Housing



The McMansion Is Not a Sustainable Concept

Housing



- The modern American single-family subdivision is the Appalachia of the year 2050:
 - Too far to work, unaffordable to heat and cool.

Transportation



- **We're not going to succeed by driving a Prius from Modesto to Santa Clara.**
- **We're not going to succeed by carpooling in a Hummer.**

Transportation



- **We cannot build our way out of congestion. We must plan our way out. Starting NOW!**

Our Communities Must Look More Like Copenhagen, and Less Like Orange County.



People live within a mile or two of where they work, shop, eat, school, and play.

To Achieve an 80% Reduction 80% Must Go.

- About 85% of us get to work in private autos.
 - In Copenhagen, about 85% do NOT. 36% bicycle.
- About 65% of us live in single family homes.
 - In Copenhagen, about 85% do not.
- 80% of our energy is fossil-fuel based.
 - This has got to change.



Cut the total use in half
Double or triple the renewables
Retire the unsequestered coal
Pursue alternatives to autos
Reward frugality
Discourage waste
Build communities.



- We need **fundamental** change.

Major Land Use Changes

- **Not one more single family home.**
- **Not one more new or widened major road**
 - Major zoning changes needed.
 - The goal: all new dwellings transit-friendly
 - Bicycle and Pedestrian-friendly development.
- **Shared amenities – condos and cohousing**



Major Transportation Changes

- Fundamental technological changes in personal transportation.
 - PHEV automobiles, scooters, and transit vehicles
 - Guideway systems in urban centers
 - Bicycle and pedestrian oriented communities
- Most air travel replaced with virtual travel
- Freight must move by rail



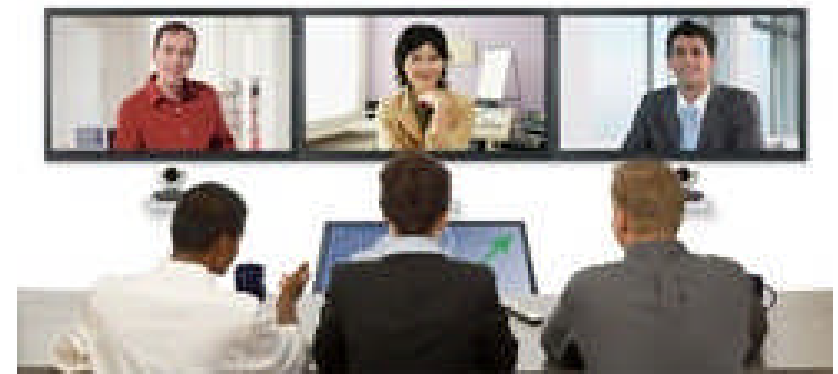
Major Personal Changes

- No more jetting around the world
- Dramatic reductions in family travel for vacations, Thanksgiving and Christmas
- So much for “Going away to College.”
- “Personal cars.” Sorry about that.
- Meal planning: “Running out to the store” gives way to the 100-mile diet.
- You are going to get to know your neighbors a LOT better. **It's OK.**



Major Business Changes

- Conferences (like this one) will be virtual.
- Virtual reality helmets replace private jets.
- Long-haul trucking is a rarity
- Just-in-time inventory will change
- Services, not goods
- Repair, not replace
- Engineer to recycle



Our Role As Utilities Influencing The Future

- **Resource Planning**
 - Renewable development and integration
 - Gridwide distribution of hydro flexibility
 - Aggressive smart grid development
 - Innovative storage technologies
 - Retire all conventional coal by 2035
- **Land Use:**
 - Stop subsidizing sprawl**
 - Line extension policies to suburbs
 - New Customer Hook-up charges
\$1000+/kW
 - Single Family / Multi Family Rates
 - Urban / Rural Rates



Our Role As Utilities

Cleaning Up Our Own Act

- **Transportation**

- Our own employees – bonus for living close.
- Install state-of-the-art teleconferencing.
 - NO conferences in “places.”
 - NO UEF “meeting” after 2009.

- **Our Facilities**

- Demonstration of energy efficiency technology

- **Our Inventories**

- Get smarter to avoid transportation costs



Can We Meet This Challenge?

- **We must.**
- Here's a picture of downtown Olympia, where I live, at high tide after 5 feet of sea level rise.

