#### http://www.sandiego350.org/ has the full panel biographies and slides, under the *Download* button.



Please sign the **sandiego350.org** pledge and attend the important 350.org event next Saturday. **Congressman Bob Filner** and this panel's Bill Powers are among the scheduled speakers.

#### Message Summary

Preventing climate destabilization is the challenge of all time. Failing is not an option. Rapid transition to green energy and green transportation is the answer but can it be done in time? This panel will start with the earth-science facts and progress into describing the policies that can achieve success. Energy, transportation, and workforce requirements will be described. This challenge extends down into our local government agencies. California has made a reasonable start, but now it's time for fundamental change at the federal, state, and local levels.

#### Panel Members

**Scott Peters** is the Chairman of the San Diego Unified Port Commission and Chairman of the San Diego Foundation's Climate Initiative. He served for eight years on the San Diego City Council and from 2006 through 2008 was San Diego's firstever Council President. Before his public service, Scott had a 16-year environmental law practice. Scott has also served on the California Coastal Commission, the California Commission on Tax Policy in the New Economy, the League of California Cities, and the San Diego Association of Governments.

#### Panel Members, continued

**Mike Bullock** chairs the Transportation Committee of the San Diego Chapter of the Sierra Club. He serves on the Energy-Climate Committee of Sierra Club California, helping to write resolutions on road and parking use. His parking policy report was published by the Air and Waste Management Association. He spoke on Climate and Car Parking Policy at the "Towards Carless Cities" conference in Guadalajara. He is a retired Satellite Systems engineer, a SDCDP Central Committee member, and a GO-team/CDP Delegate. He helped write two transportation-related bullets for the CDP's 2010 Platform. He holds a BSEE and a MSE degree.

**Bill Powers**, a registered professional engineer with 25 years of energy/environment experience, is involved in distributed-PV plants and permitting peaking gas turbine, microturbine, and engine cogeneration plants. Bill challenged NG power plants and LNG import terminals in Baja, California that would largely serve California. He organized the first U.S. conference on dry-cooling power plants and authored "San Diego Smart Energy 2020", using California's Energy Action Plan to advocate for locally-distributed renewable and combined heat and power resources, cutting regional-power-generation GHG emissions 50 percent by 2020. Bill holds a Duke University BSME and a UNC Environmental Sciences Masters in Public Health.

#### Panel Members, continued

**Jennifer Badgley** is the Political Director for the International Brotherhood of Electrical Workers (IBEW) Local 569. IBEW is the oldest and largest union of electrical workers in the U.S. IBEW Local 569 represents 2500 electrical workers in San Diego and Imperial Counties. In partnership with signatory employers, it runs a college-accredited electrical apprenticeship program with campuses in San Diego and Imperial counties. At IBEW 569, Jennifer helps unrepresented workers organize into the union. She develops political campaigns and policy strategies aimed at retaining and creating good local careers in the energy industry. She also develops member education and communications programs.

**Anne Tolch** is the Vice President of the Sustainability Alliance of Southern California, an organization dedicated to transforming our region into a model of sustainability by 2020. She serves on the San Diego Leadership Board for the California Lung Association and is a Navy League, Coronado Council Director. She focuses on renewable energy, clean air, and water conservation. She previously served as the Director of Development, World Resources Simulation Center, of the Global Energy Network Institute and on a range of humanitarian issues on the Missouri Episcopal Diocese's Bishop's staff. She has a Plant Biology degree from Southern Illinois University.

# **Scott Peters**

Chairman of the San Diego Unified Port Commission and former San Diego City Council President Chairman of the San Diego Foundation's Climate Initiative

### The San Diego Foundation's Environment Program

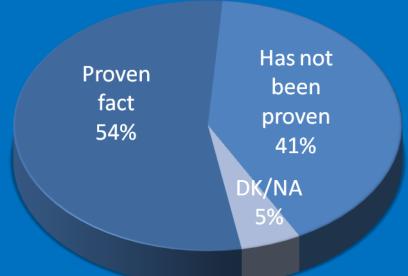


Presented by Scott Peters Chair, Climate Initiative



# A majority of voters believe global warming is a "proven fact."

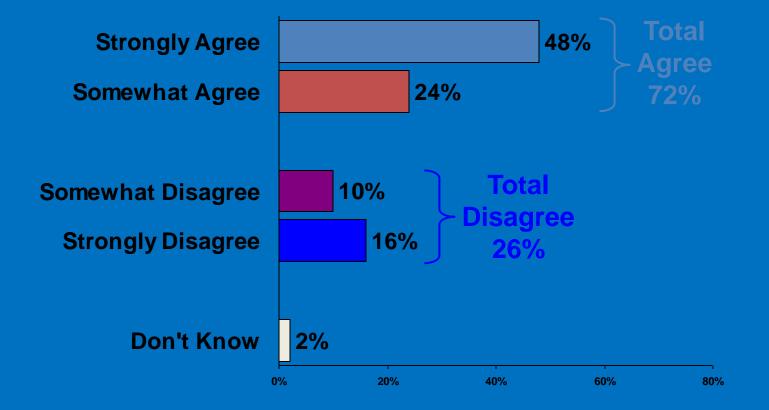




While there are many voters who don't believe so, there is broad support among all voters for implementing laws designed primarily to reduce greenhouse gas emissions Voters are highly supportive of San Diego County setting aggressive goals for greenhouse gas emission reductions.

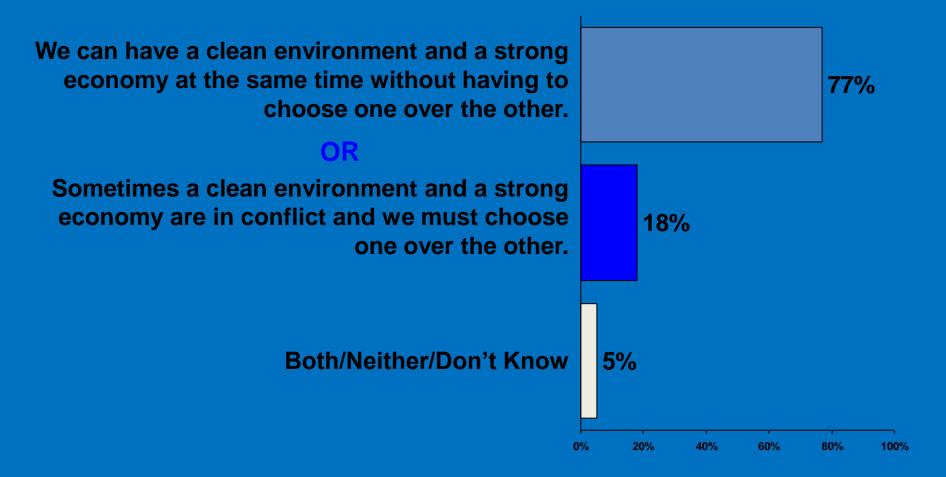


"San Diego County should take a statewide leadership position in setting goals for reducing greenhouse gas emissions."





#### An overwhelming majority believes a strong economy and a clean environment are compatible.

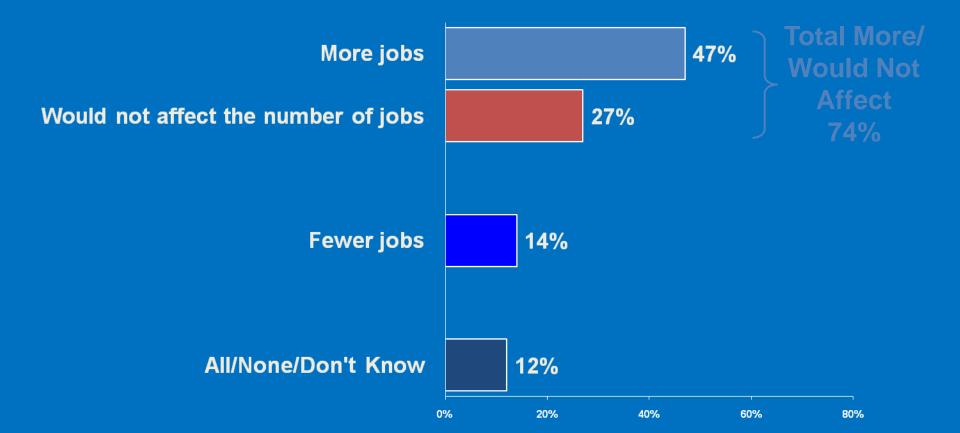


3. Now I am going to read you a pair of statements. Please tell me which statement comes closest to your own view, even if neither of the statements matches your views exactly.

#### Nearly one-half of voters believe reducing global warming will yield more jobs for County residents.



Do you think that San Diego County doing things to reduce global warming in the future – like expanding the use of clean (SPLIT A: technology) (SPLIT B: and renewable energy), and requiring reductions in pollution – would cause there to be more jobs for people in San Diego County, would cause there to be fewer jobs, or wouldn't affect the number of jobs for people around the county?



# Predictably, economic issues currently dominate voter concerns.

The a

The San Diego Foundation A foundation for your passion Environment Program

(Ranked by % Extremely Serious Problem)

■ Ext.Ser. ■ Very Ser. ■ S.W. Ser. □ Not Too Ser.

	Unemployment	46%			39%		11% 4%		
	The condition of the local economy	35%		42%			16% 7%		
	Illegal immigration	34%			30%		20%		
	Having sufficient water supplies mount of money people pay in local taxes		24%		37%		24%	15%	
moun			24%		33%		24%	19%	
	Traffic and congestion	22%		3	34%		29%	15%	
Po	ollution of the coastline and beaches	18%		32%		3	0%	20%	
	Global warming	16%	2	2%	25	5%		37%	
The quality and safety of drinking water		15%	4	29%		27%		29%	
	Loss of natural areas	14%	2	27%		33%		26%	
	Air pollution		2	26%		29%		31%	
	Too much growth and development	<mark>12%</mark>	22%	22%		31%		35%	
	Climate change	12%	21%	1% 24		.4%		43%	
	0	%	20%		40%	<b>60%</b>		80% 10	

2. I am going to mention a list of issues people in San Diego County may be concerned about. Please tell me whether you think it is an extremely serious problem, a very serious problem, a somewhat serious problem, or not too serious a problem for people who live in San Diego County. Split Sample

# What voters care about regarding SB375



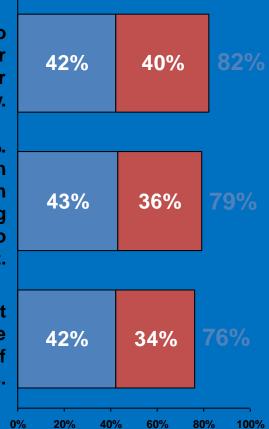
- The regional plan under SB375 is one that protects the natural environment, grows the economy, and conserves local water supplies.
- The regional plan under SB375 would locate homes and jobs closer together
- SB 375 will involve expanding and improving the County's public transit system.
- San Diego County takes a leadership position in setting goals for greenhouse gas emissions.

# Themes which resonate most with voters emphasize the economic benefits of AB 32.

(Ranked by % Total Convincing)



□ Very Conv. ■ S.W. Conv.



(AIR POLLUTION/COST SAVINGS) One of the best ways for San Diego County to reduce air pollution is to increase the energy efficiency of our homes, cars, and appliances. By reducing our energy use, we can cut air pollution and save money on what we pay for energy.

(JOB CREATION) Unemployment in San Diego County is around 11%. Investments in more energy-efficient technology and infrastructure can create new, high-quality jobs and expand business opportunities here in San Diego County. We can put thousands of people to work building solar panels and other clean energy products, and upgrading buildings to become more energy efficient.

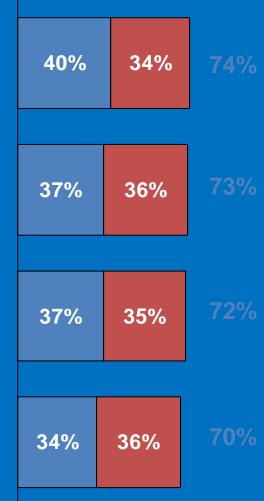
(ENERGY COMPANIES) Gas prices seem to go up whenever we can least afford it, and electricity prices keep rising. It's time to invest in renewable energy and greater energy efficiency, and free ourselves from the grip of the big energy companies.

11. Here are some statements from people who believe that San Diego County should do <u>more</u> to promote energy efficiency and clean energy use. Please tell me whether you find it very convincing, somewhat convincing, or not convincing. Split Sample

# Protecting public health is also a compelling theme.



#### □ Very Conv. ■ S.W. Conv.



(AIR POLLUTION/HEALTH) Air pollution and smog are responsible for thousands of cases of lung disease and asthma across San Diego County each year. Using more clean, renewable energy in San Diego County will help make our families healthier.

(COMPETITION/FAIR SHARE) Other countries – such as China – and other states and regions are all competing to be leaders in clean energy technology and secure billions of dollars in investments. We need to invest more in clean energy technology and make sure San Diego gets its fair share of jobs from this emerging economic boom.

(NATIONAL SECURITY) Investing in clean energy technology in San Diego County will improve our national security by making us less dependent on oil-rich countries – some of which support terrorism. And we will send fewer of our troops into conflicts involving oilproducing countries.

(ECONOMIC BRIGHT SPOT) During this recession, clean technology is the one bright spot in San Diego County's economy. While the overall number of San Diego County jobs shrank in recent years, there are four times as many clean technology companies in San Diego County creating jobs than there were two years ago.

 11. Here are some statements from people who believe that San Diego County should do more to promote energy efficiency and clean energy used. Please tell me whether you find it very convincing, somewhat convincing, or not convincing. Split Sample

 0%
 20%
 40%
 60%
 80%
 100%

# **Mike Bullock**

# Chairman of the Transportation Committee of the San Diego Chapter of the Sierra Club and CDP Delegate, 73<sup>rd</sup> AD

#### **13 Slides**

mike bullock@earthlink.net

760-754-8025

## Climate Crisis Performance of Our California & Regional Transportation Policy

• California Governor's Executive Order S-3-05

http://www.dot.ca.gov/hq/energy/ExecOrderS-3-05.htm

- SB 375's Impact on Regional Transportation Plans
- San Diego Association of Government's (SANDAG's) Draft Regional Transportation Plan (RTP) Climate-Crisis Performance Mike Bullock

mike bullock@earthlink.net

760-754-8025

#### Governor's Executive Order S-3-05 Slide 1 of 2

- Signed in 2005; still in effect
- Greenhouse gas (GHG) Emission Trajectory
  - 2000 levels by 2010
  - 1990 levels by 2020
    - Same as AB 32, so-called Global Warming Solutions Act

- Prop 23 tried to suspend this

- 80% below 1990 levels by 2050
- Achieved by Plans & Status
  - For transportation
    - CALTRANS & CARB  $\rightarrow$  Cal EPA  $\rightarrow$  Governor

#### Governor's Executive Order S-3-05 Slide 2 of 2

- Designed to Cap atmospheric levels of CO2 at 450 PPM, by 2050
  - Requires other countries to achieve similar reductions
  - Most civilized countries have adopted a similar plan
  - 450 PPM must then be brought down to safe levels
    - Eliminate use of fossil fuels
    - 350 PPM may be safe

"350.org" is named for this safer level of atmospheric CO2.

#### Temperature-Change Probabilities Associated with 450 PPM C02

http://www.aqmd.gov/ceqa/handbook/GHG/2009/april22mtg/CBDcomments.pdf

- Cap of 450 PPM
  - A 50% chance that temp change stays below 2°C
    - 2°C means
      - Loss of 97% of Corral Reefs
      - 1 to 3 Billion (of 7 B) people experience water stress
      - Loss of summer ice at North Pole
      - 58% unstable tundra
  - 30% chance of more than 3°C
    - Exponentially worse than 2°C

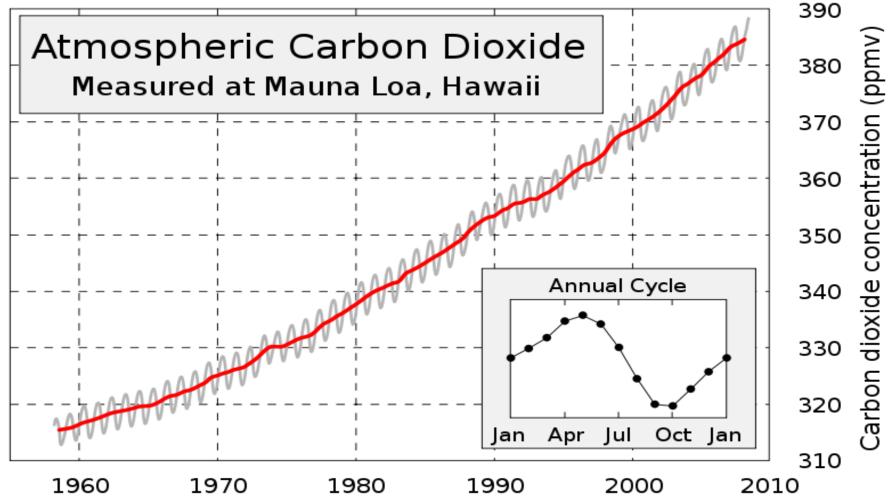
James Hanson: Present level of C02 "already in the dangerous zone" (385 PPM when written)

#### **Climate Data**

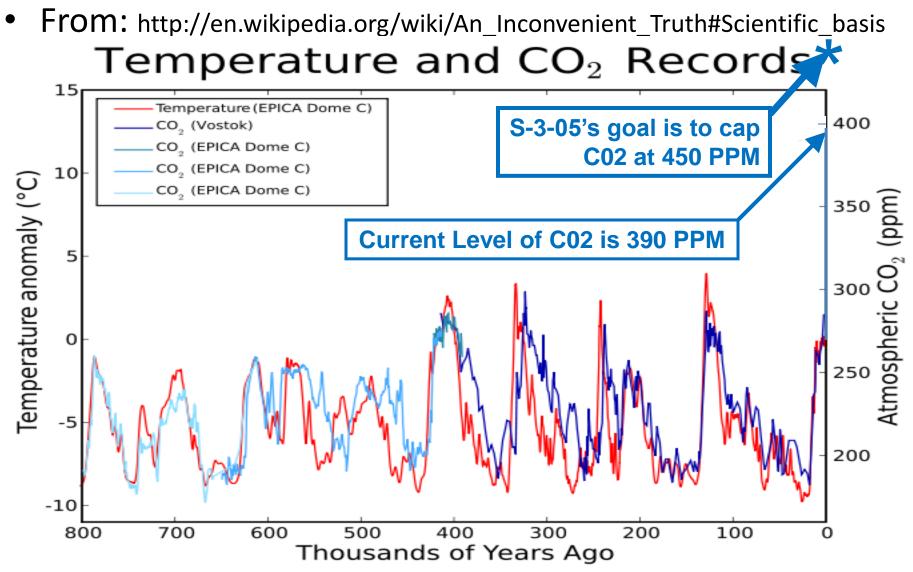
#### • Keeling Curve:

5

http://en.wikipedia.org/wiki/An\_Inconvenient\_Truth#Scientific\_basis



#### **Our Climate Crisis**



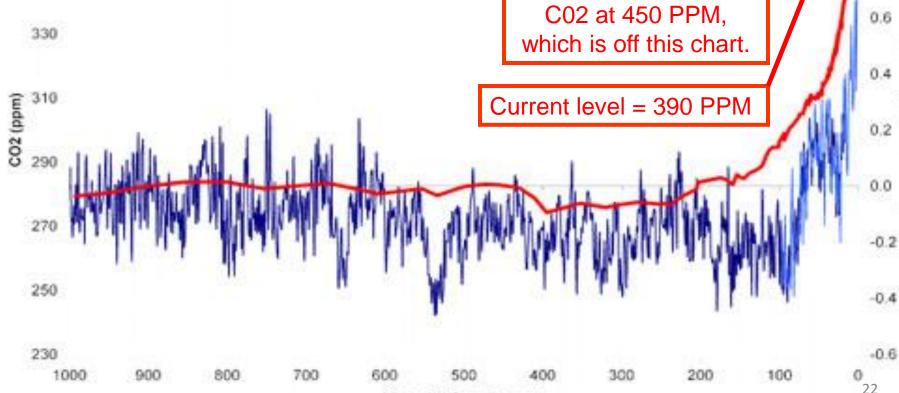
# Cour Climate Crisis Earth & Space Research (ESR) website: http://www.esr.org/outreach/climate\_change/mans\_impact/man1.html Temperature in degrees centigrade (compared with 1960-1990 baseline) Atmospheric carbon dioxide (CO2 in parts per million)

S-3-05's Goal is to cap

350

0.8

emperature (difference



Years Before Present

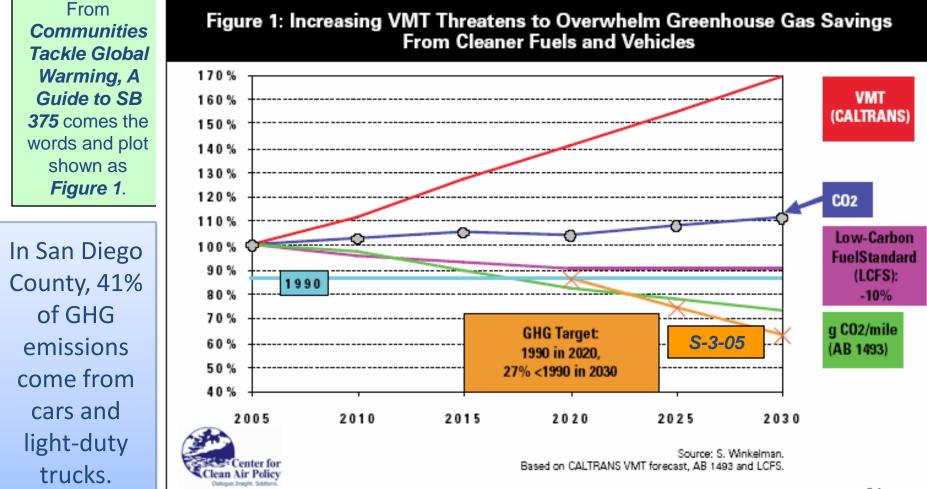
# SB 375, Passed in 2008

http://www.nrdc.org/globalwarming/sb375/files/sb375.pdf

- Authored by Speaker Pro Tem Darrell Steinberg
- Only for cars and Light-duty trucks
- Key provision
  - California Air Resources Board Provides vehiclemiles-travelled (VMT) reduction targets
    - Years 2020 and 2035
    - To Metropolitan Planning Organizations (MPO)
    - Computed in Regional Transportation Plans (RTP)
    - Our MPO, SANDAG, is producing the first post-SB375 RTP

#### **Trajectories to Support Calculations**

#### Purple (Low carbon fuel), Green (C02/Mile), & Gold (S-3-05)



#### SB 375's Per-Capita VMT Reduction for 2035, to Support S-3-05

Variable Name	Definition	Taken From					
f	net factor of the emissions of Greenhouse Gas	Gold Line <sup>1</sup>					
f_Pavley	factor of the average statewide mileage	Green Line <sup>1</sup>					
f_Fuel	factor of the reduction of GHG due to low-carbon fuels	Purple Line <sup>1</sup>					
f_Population	factor of the population in the region of interest	CARB <sup>2</sup>					
f_PerCapitaVMT	factor of per capita driving	Computed					
<sup>1</sup> From the Chart cor	<sup>1</sup> From the Chart constructed by Steve Winkleman, as shown in the "Guide to SB 375" report.						

Shown in the Guide to

<sup>2</sup>Population estimates are from CARB's http://arb.ca.gov/cc/sb375/mpo.co2.reduction.calc.pdf. Namely 3,034,388 for 2005 and 3,984,753 for 2035. So f\_Population = 1.314

f = f PerCapitaVMT \* f Population \* f Pavley \* f Fuel  $f_PerCapitaVMT = f / (f_Population * f_Pavley * f_Fuel)$ 25

Per-Capita VMT Reduction for 2035, as Required by S-3-05 f\_PerCapitaVMT = f / (f\_Population \* f\_Pavley \* f Fuel) f\_PerCapitaVMT = 0.525 / (1.313 \* 0.685 \* 0.9) f PerCapitaVMT = 0.649This is a 35.1% decrease in per-capita VMT. The proposed RTP only achieves 13%!

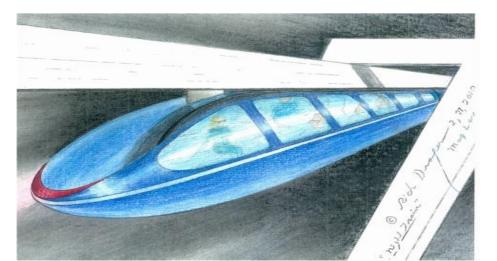
Because .649 \* 1.313 = .8515, in 2035, the people in San Diego County must drive 15% less than they did in 2005, even with the 31.3% increase in population. *Therefore, why add lanes?* 

#### Strategies to Achieve 35%

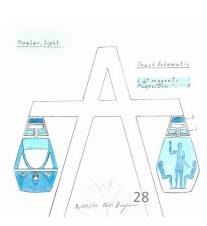
- Stop expanding freeways
  - No need, because we must drive less
  - Eliminate congestion with following strategies
- Reallocate freeway expansion funds to transit
- Pricing to increase fairness & choice
  - Parking demonstration projects to unbundle cost
  - State legislation
    - Unbundle the cost of all "free" parking
    - Equitable and environmentally-sound road-use fees
- Smart growth, complete streets, bicycle education

#### **21<sup>st</sup> Century Transportation Solutions**

- Redesigned rail or monorail systems
  - Electric, automated, 24/7, frequent service
- Commitment to clean-bus technology
- Equitable driving fees to reduce taxes
- Unbundled car parking cost







# **Bill Powers**

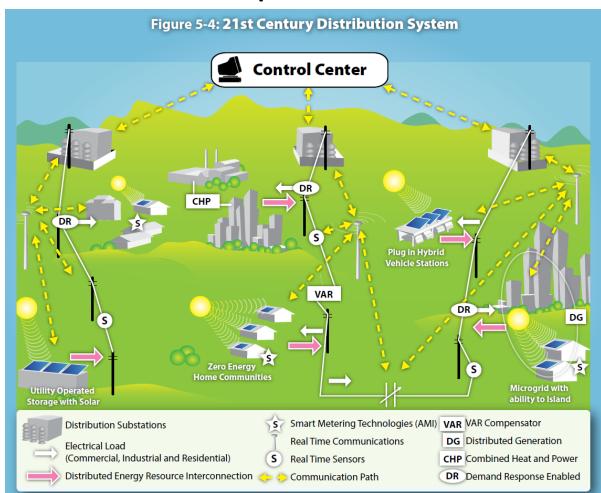
**Powers Engineering** 

**10 Slides** 

#### Green Jobs and Distributed Electricity Generation in San Diego

San Diego County Democratic Convention Bill Powers, P.E., Powers Engineering September 17, 2011

# California's policy vision – solar power on the rooftops, battery storage, small local power plants



#### What is the state's plan? Joint Utility Energy Efficiency Strategic Plan (2008, 2011)

- Energy efficiency & demand response
   (net zero energy buildings: energy efficiency + rooftop PV)
- All new residential net zero by 2020
- All new commercial net zero by 2030
- 25% of existing residential ~ net zero by 2020
- 50% of existing commercial net zero by 2030
- 30 40% reduction in existing building electricity demand via energy efficiency measures
- Reduce air conditioning loads by 50% by 2020

#### Gov. Brown's Clean Energy Jobs Plan – local focus

- 12,000 MW of local renewable power by 2020, out of 20,000 MW target
- 2,000 MW initial local PV target for San Diego now 1,200 MW
- Feed-in tariff for renewables under 20 MW
- 4,000 MW of new combined heat & power
  - (can be fueled with biogas or biomethane)
- Use utility on-bill financing or Property Assessed Clean Energy (PACE) assessments for energy efficiency upgrades and rooftop solar

# San Diego Smart Energy 2020

#### THE 21ST CENTURY ALTERNATIVE



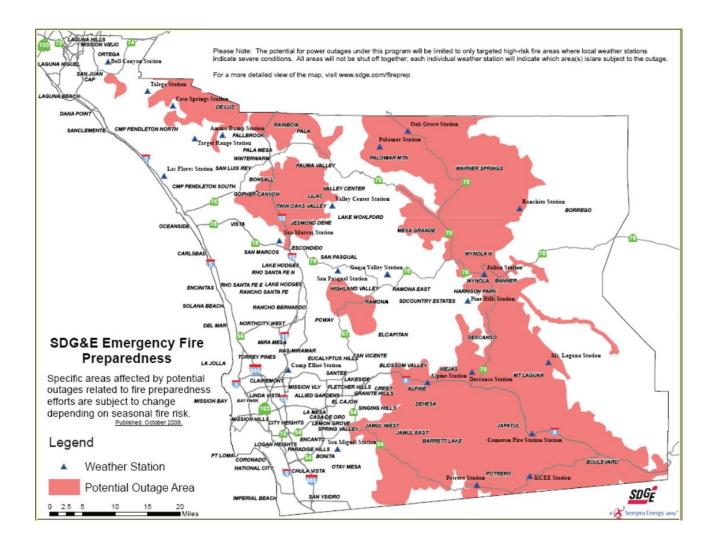
Property Assessed Clean Energy assessments – mechanism to create sustainable energy efficiency and PV markets – these markets drive local green jobs

- PACE assessments, at 7% over 20 years, for energy efficiency & PV repaid along with property tax payments
- Reduced electric bill with no out-of-pocket expense
- Loans have a minimum value of \$5,000, no maximum limits, and can be used for:
  - air conditioning and ventilation systems
  - energy efficient windows, doors and skylights
  - white-roofs and coatings
  - solar PV, natural gas fuel cells
- PACE temporarily stalled in 2010 by contrary Federal Housing Financing Agency (FHFA) opinion

PACE may be back in the near future due to a court-ordered rulemaking proceeding at FHFA, and proposed federal legislation

- August 2011 federal court orders FHFA to initiate rulemaking proceeding regarding PACE assessments, in part due to lawsuit by California
- Bipartisan federal legislation has been introduced to address FHFA concerns regarding PACE assessments – "PACE Assessment Protection Act of 2011, HR 2599"
- San Diego Board of Supervisors resolution introduced in September 2011 in support of HR 2599
- Utility on-bill financing is equivalent to PACE, though program receives small share of energy efficiency funds – fate of utility "public good charges" in question

# Areas subject to fire cut-off by SDG&E, affected residents excellent candidates for PACE retrofits



### Distributed PV with some battery storage for peak power and reliability is right green fit for San Diego

- Presented as alternative in 2008/2009 to SDG&E ratebased \$250 million project to build 100 MW of local PV
- Solves problem of electricity cut-off to 45,000 to 60,000 backcountry SDG&E customers during firestorm
- SDG&E has applied to build 450 MW of peaking gas turbines to support renewable energy integration, ~\$130 million/yr over 20 years to have available if needed
- Adding limited 3-hr battery capacity to distributed PV arrays achieves same peaking/integration objective, and home/business reliability in emergencies. Over 600 MW could be built over 20 years with same \$130 million/yr

Green jobs are driven by markets for green services/products – PACE assessments and on-bill financing can create large, sustainable markets

- PACE assessments and on-bill financing eliminate principal hurdle – upfront costs
- Recent studies (UCLA, LBNL) indicate assessed home value increases by more than the value of the solar PV system the moment the system is installed
- PACE assessments and on-bill financing provide near-term avenue for high urban market growth in energy efficiency and PV
- Fair tariffs for PV is another proven avenue for establishing a dynamic PV market, though policymakers in California reluctant to establish adequate pricing

# **Jennifer Badgley**

#### Political Director for the International Brotherhood of Electrical Workers (IBEW) Local 569

# **Anne Tolch**

Vice President of the Sustainability Alliance of Southern California California Lung Association Leadership Board Member Navy League Coronado Council Director

### 20 Slides

You came into the world with a specific destiny. Something to fulfill, some message that has to be delivered, some work that has to be completed. You are not here accidentally--you are here meaningfully.

-Osho

# Uniting for Climate Action



### Our Climate is Changing

This has caused an increase in

- Hurricanes
- Severe rainfall and flooding
- Food shortages
- Increase in outbreaks of malaria
   and other diseases

 Rising co2 in our atmosphere is warming our planet, acidifying our oceans, and killing coral and phytoplankton the basis of all marine life.

### **Our Future is in Jeopardy**

### **US** emissions

- 1/3 from smokestacks
- 1/3 from tailpipes
- 1/3 from buildings

San Diego Emissions 46% from Transportation



Widespread crop and pasture losses



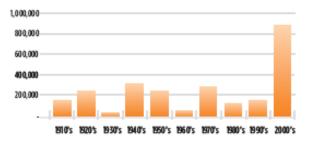


What does this mean for San Diego?

If trends continue, by 2050 Mission **Beach and other** low-lying Beach areas will be flooded. High tides alone (purple) are expected to flood parts of the sandy beach and bayside streets.

### San Diego

#### Total Acres Burned by Wildfires in San Diego County by Decade



In the last ten years, the area burned by wildfires was unprecedented. In 2003 and 2007, wildfires burned nearly 740,000 acres across San Diego County.

## Why Haven't We Won?

- Many organizations and efforts with different messages. This fragmented the call to action.
- Technical language rather than stories of impact to people and animals
- Did not engage American intellect and emotion
- Oil and Coal interests working in opposition
  - Spreading misinformation
  - Funding campaigns, lobbying Congressional Members
  - \$30M to think tanks to discredit the science.

## What Must Happen Next

#### Greenhouse gas emissions/capita

•

Tons of CO<sub>2</sub> equivalent per capita over 1 year Data for 2008-09 G-8 nations US 25 Canada 24 Russia 16 Japan 12 Germany 12 Britain 11 France 11 Italy G-5 nations South Africa 11 Mexico 6 China 6 Brazil 5 India 2 AFP SOURCE: WWF/Allianz

- U.S. must commit to substantial reductions in Co2 emissions.
  - Their leadership will put international pressure on China and India to follow suit
- Narrow window to enact legislation and begin implementing on the ground reductions.

## How We Win

- Harmonize call to action.
- Elect candidates who will fight against climate change.
- Bring it to the media and political forefront.
   Make climate change a focal point of the 2012 presidential race.
- Couple climate change education with entertainment. Concerts, events etc.

## What You Can Do

- 1) Sign the pledge
- 2) Join worldwide rally September 24
- Elect candidates who are committed to climate change action.
- 4) Talk with your friends and family

## Sign the Pledge

### I'll do my part. Elected representatives – do yours!

We can prevent the worst climate change impacts, but only if we <u>all</u> do our part – individuals, businesses and elected representatives. My pledges are below. I will vote only for candidates who commit to doing their part.

#### My Pledge (personal/business) – I will:

Drive less and bike, walk or take public transit.
41% of SD County's greenhouse gas emissions are
from cars and light trucks.

- Eat less meat. Worldwide, the livestock industry produces 18% of emissions, more than transportation.
- Use less (and cooler) water. 20% of California's energy goes to transport, treat and heat water.
- Support businesses that operate sustainably.
- Vote for action. I will vote only for candidates who commit to real action on climate change.

#### Elected representatives' responsibilities:

- Move the region forward. Ensure the 40-year Regional Transportation Plan (to be approved in October) reduces carbon emissions to meet CA goals.
- Fund public transit and bicycle transportation, rather than more roads.
- Put a price on carbon emissions.
- Invest locally in clean energy and clean energy jobs.
- Support the US signing international treaties to bring carbon dioxide back down to 350 ppm.

Name (or business):	Email:		
Address, City, State, Zip:	Phone:		
Comments:			

Please keep me informed about climate actions in San Diego (your information will not be sold to any third party)

## **EarthKeeping Interfaith Discussion**

- An Interfaith Panel with representatives from various faith traditions will discuss their beliefs in terms of caring for and protecting Creation, especially in light of the climate crisis. We'll also look at being translated into practical action for a more ethical and sustainable world.
- St. Paul's Cathedral (Guild Room), 2728 Sixth Avenue, San Diego, CA 92103
- 10:00 11:00am, September 24

## March & Rally in Balboa Park

- March about 1.2 miles on sidewalks, with banners, drums & puppets - culminating with a rally on the lawn by the Sports Museum.
- Gather on the East (Balboa Park) side of Sixth Avenue between Laurel and Juniper
- Speakers include Congressman Bob Filner, Marshall Saunders, Bill Powers, and other local leaders
- 11:00am 1:00 pm, September 24



## **Supporting Organizations**



# **More information**

# www.SanDiego350.org

# ...stay tuned for more on uniting for climate action



