

California Energy Commission

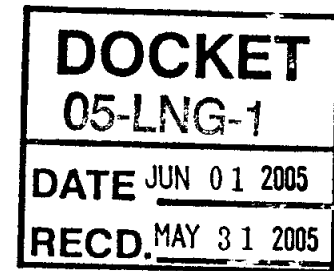
June 1, 2005

Testimony to be Included in the LNG Workshop

Docket No. 05-LNG-1

Docket Unit, MS-4

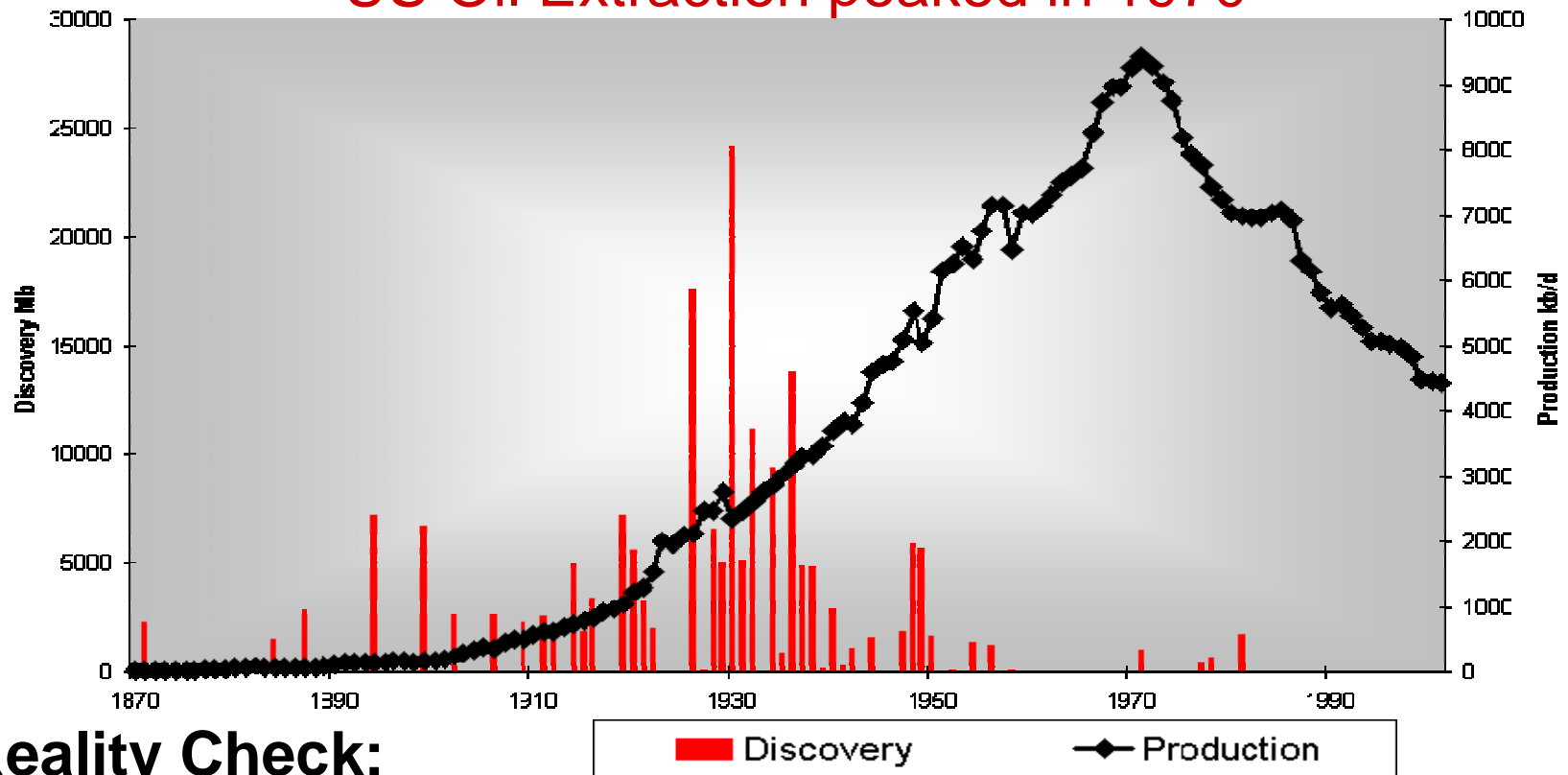
Stephen Heckeroth
steve@renewables.com



US Over a Barrel

US Oil Discoveries peaked in 1930

US Oil Extraction peaked in 1970



Reality Check:

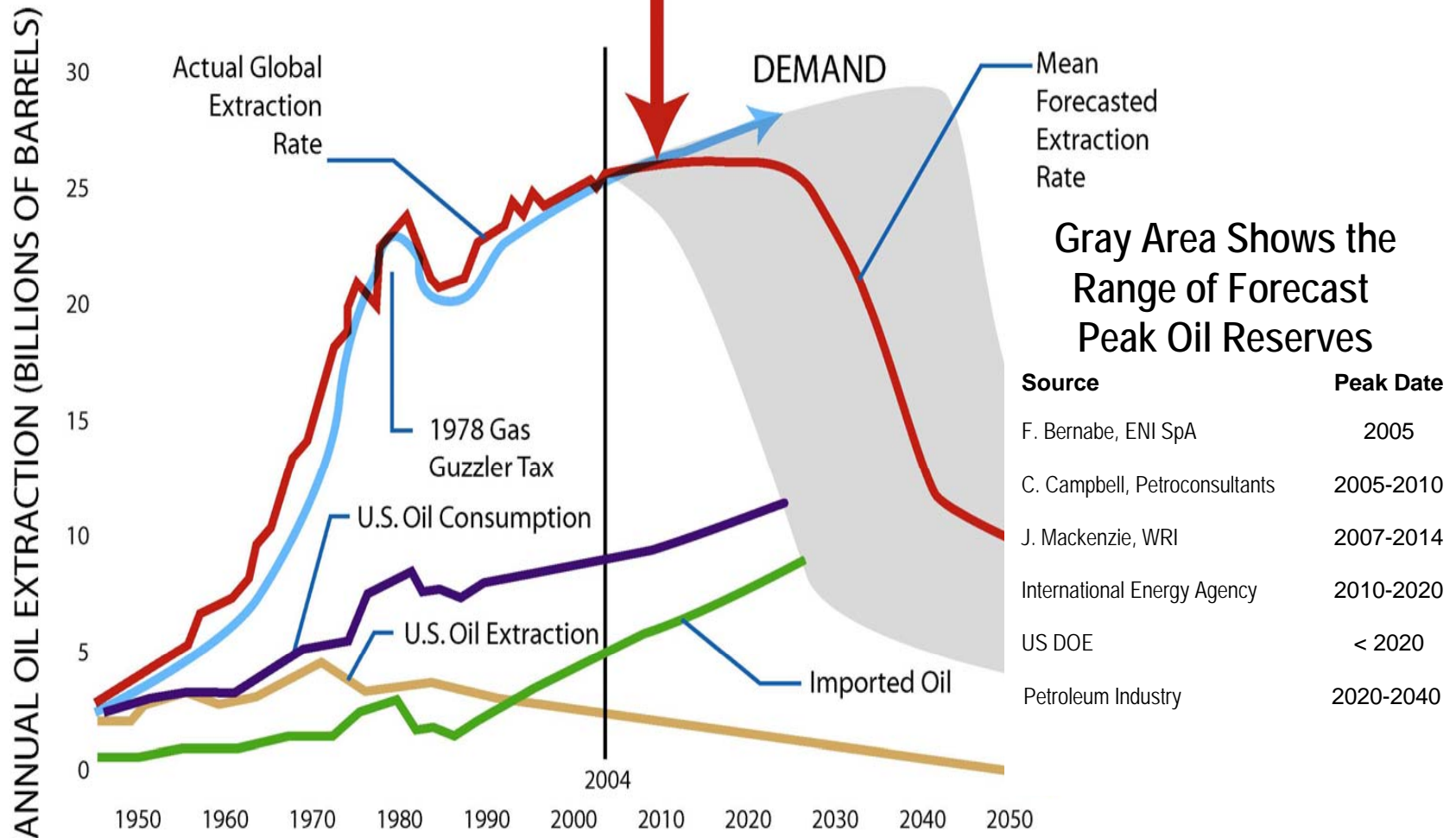
- This is not a projection it is historical data from the petroleum industry.
- Oil is not produced and it must be discovered before it can be extracted.
- US Oil “production” has been declining at an average of 2%/year since 1970.
- US Oil imports have been increasing at an average of 4%/year since 1970.

5/31/2005

Hecheroth

World Peak Oil

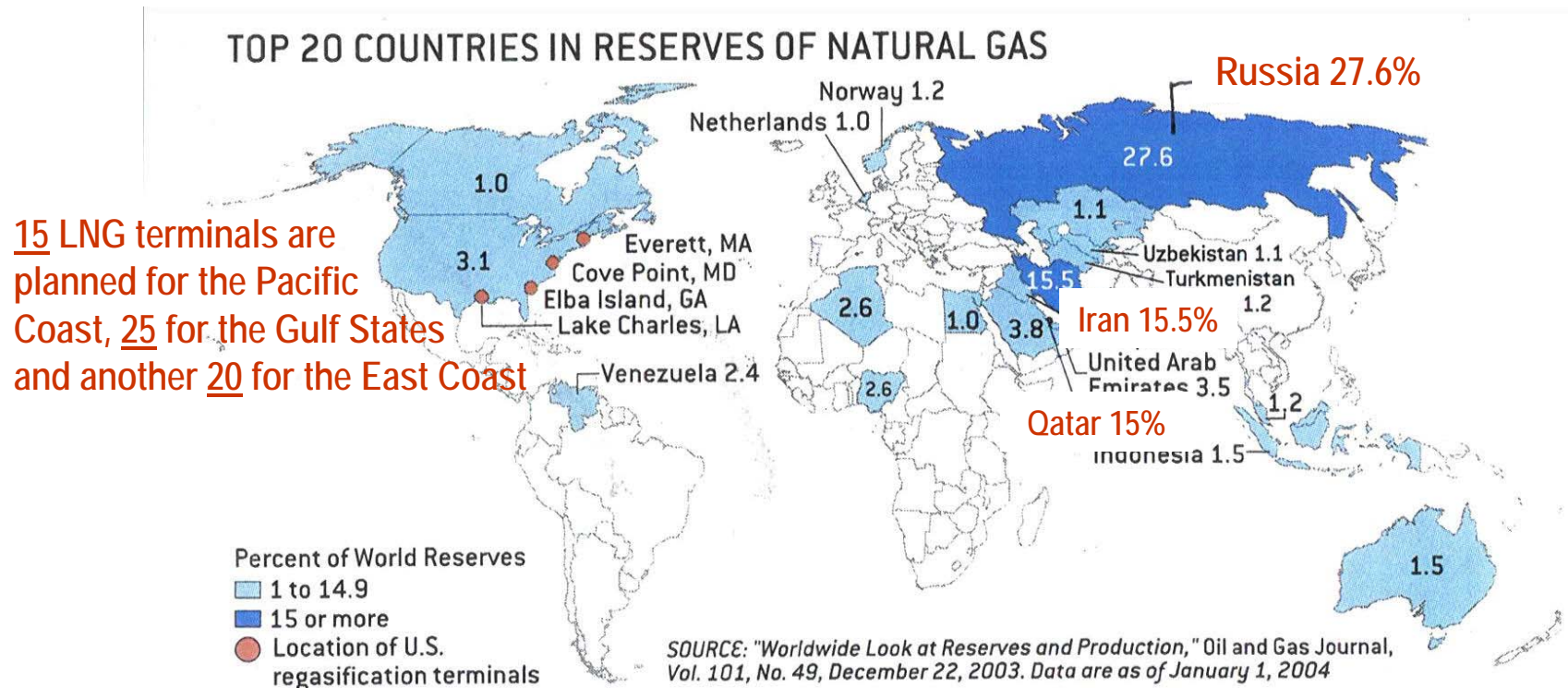
CRISIS POINT



5/31/2005

Hecheroth

Who Has Natural Gas



Most of the new generating capacity in the US is fueled by natural gas. The proposed Liquefied Natural Gas (LNG) terminals will cost about \$5 billion each. If these terminals are built the capital costs will be passed on to the ratepayer, US trade deficits will continued to rise, dependence on distant volatile energy resources will be institutionalized and another round of resource wars will begin.

Advantages of Solar Energy

Fossil Fuel Dependence



- Finite fuel supply
- Ugly infrastructure
- Polluted air / Climate change
- Extraction site devastation
- Polluted land
- Spills and polluted water
- Energy resource wars
- Susceptible to terrorism

Solar independence



- Abundant solar energy
- Aesthetically superior
- Clean air / no CO2 emissions
- No extraction sites
- Healthy land
- No water pollution
- Free solar fuel
- National and individual security

Advantages of Distributed Self-Generation

Conventional Power Generation



- Explosive polluting terrorist targets
- Requires fuel from distant sources
- Price Volatility
- Uses valuable land for extraction and power generation
- Difficult permitting process
- Requires security infrastructure
- Requires new transmission and distribution lines
- Power has low value (\$0.03 – \$0.04/kWh)
- Multinational corporate control
- Priority: Short-term profits

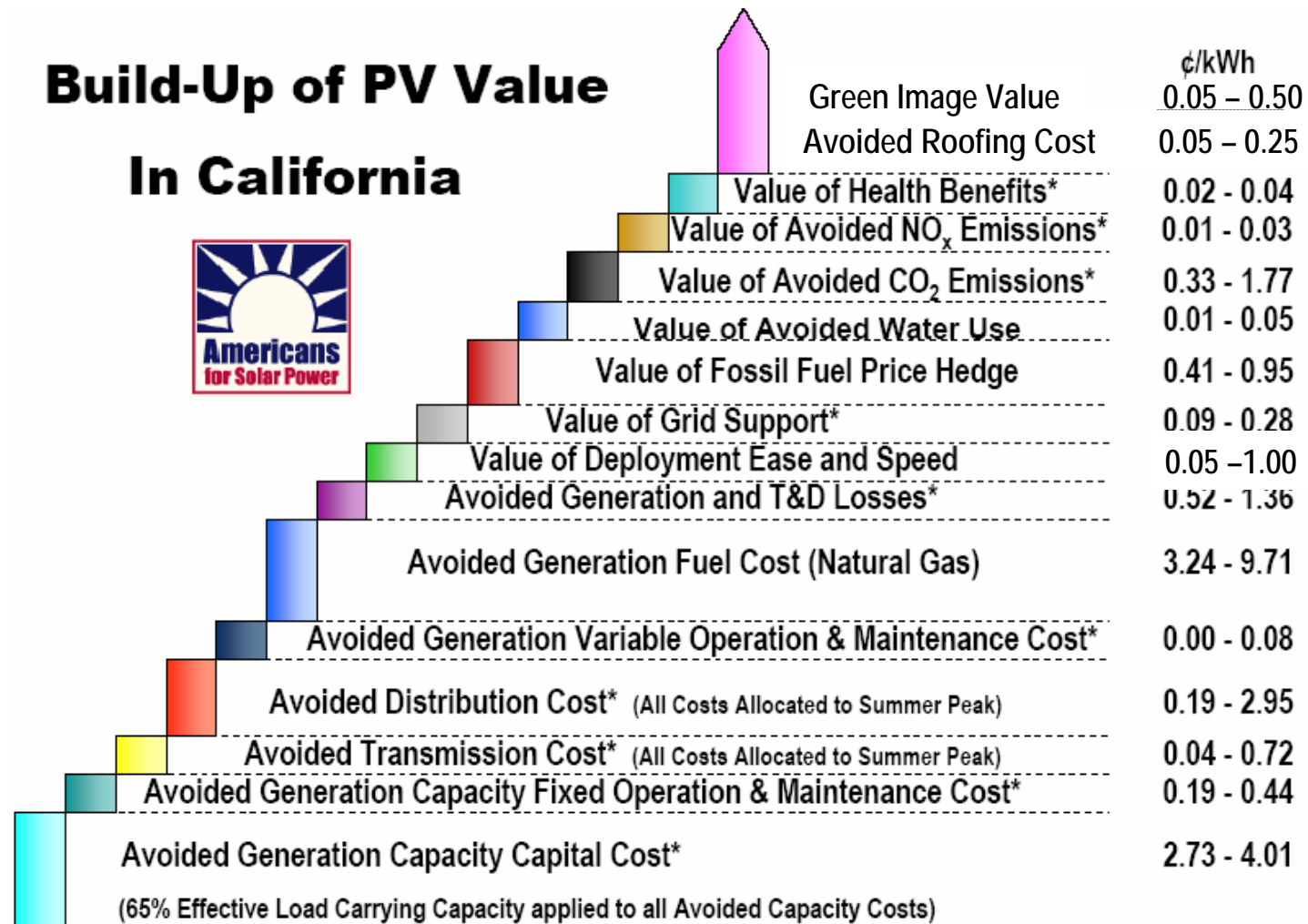
Distributed Power Generation



- Clean and Secure
- Requires no fuel, only sunshine
- Economic stability
- Uses existing infrastructure
- Easy permitting process
- Cost of roofing can be offset
- Uses existing transmission and distribution lines
- Power has high value (\$0.10 - \$0.30/kWh)
- Time of Use net metering for automatic Peak Power Shaving
- Local control for public good

The Real Economic Value of BIPV

Build-Up of PV Value In California



TOTAL ADDED VALUE of BIPV: \$.08 – \$.25 / kWh

Solar Solution

- **Economic Prosperity:**
Replacing outdated fossil fuel power plants with Solar Roofs will generate thousands of new high-paying jobs and eliminate much of the US trade deficit.
- **Security & Energy Independence :**
BIPV solutions are not terrorist targets and Solar Energy is an unlimited renewable alternative to destabilizing dependence on foreign oil and natural gas.
- **Clean, Durable and Environmentally Safe:**
Solar Power generation produces no pollution or greenhouse gases and requires little or no maintenance.
- **Distributed Generation:**
Solar Roofs will automatically satisfy on site peak power needs and increase the reliability of the electrical grid.
- **Efficiency and Sustainability:**
The Sun is expected to burn for another 5.5 Billion years, it took nature 4.5 Billion years to make the fossil fuels that we are burning in a few hundred years.
- **Unlimited Capacity:**
17,000,000 MW of potential solar capacity exists in California. (From CEC study)
- **Aesthetics:**
BIPV solutions are aesthetically pleasing. Open Pit Mines, Hugh Power Plants, Transmission Lines and Foul Air are not.

The Governor's Pledge



“California's energy crisis is not over. If we do not act now, California will face energy shortages as early as 2006.

I'm going to encourage builders to build homes using solar power.

I intend to show the world that economic growth and the environment can coexist.”

LNG terminals will lead to increased dependence on distant sources of nonrenewable energy and create a huge economic burden on ratepayers. For the same investment in solar energy California could be on a path toward energy independence and a healthy sustainable future. Fulfill the Governor's pledge and focus on solutions for the future.