Aloha and Welcome

5th MAUI ENERGY
CONFERENCE + EXHIBITION
Maui Arts & Cultural Center
March 14-15, 2018

Decarbonization: A Business Opportunity for Innovative Communities
INVITED PRESENTATION

Introduction by Frank De Rego Jr., Director of Business Development Projects, Maui Economic Development Board, Inc.; Vice Chair, Conference Program Committee

Maui Energy Conference—5 Years Later

Alice Madden | Executive Director, Getches-Wilkinson Center for Natural Resources and former Principal Deputy Assistant Secretary, U.S. Department of Energy

#MauiNRG18
Keeping Politics from Derailing Decarbonization

ALICE MADDEN
EXECUTIVE DIRECTOR, GETCHES-WILKINSON CENTER

MAUI ENERGY CONFERENCE
MARCH 15, 2018
Protecting the Environment addressing Global Warming, and pursuing Clean Energy options weren’t always political issues.
The First Earth Day - 1970
Environmental Movement Takes Shape

Set off in part by highly visible environmental problems:
- Cuyahoga River burns (‘69);
- Love Canal illnesses (‘70s);
- DDT restricted / finally banned (‘72);
- Three Mile Island (‘79)
Environmental Movement Takes Shape

Legal framework of environmental protection gains strength under President Nixon

- EPA established (1970)
- Clean Air Act (1970)
- Clean Water Act (1972)
- Endangered Species Act (1973)
Environmental Movement Takes Shape...

Founding of major environmental advocacy groups

Bipartisan Concern

- Progress begins under President Nixon

- During Reagan presidency, the Republican-led senate sent a letter to EPA Administrator Lee Thomas requesting two studies on climate change:

  “There is a very real possibility that man – through ignorance or indifference, or both – is irreversibly altering the ability of our atmosphere to perform basic life support functions.”

  - Senate Committee on Environment and Public Works, September 12, 1986

- Montreal Protocol Treaty signed in 1987 to address Ozone depletion (enacting legislation passed in 1990 via CAA)
Bipartisan Concern...

2008: Strange-bedfellow, bipartisan support is the mainstay of Al Gore’s *We Can Solve It* campaign to battle climate change.

- Nancy Pelosi & Newt Gingrich
- Al Sharpton & Pat Robertson
How & Why Did Protecting our Environment become so Politicized?
Powerful Interests Begin to Worry and Act

1980: Koch brothers first begin to dedicate significant resources to elect conservatives
1981: Exxon (internally) begins considering climate risks.
1988: UN creates the Intergovernmental Panel on Climate Change.
1988: Congress introduced the National Energy Policy Act to reduce GHG.
1995: Internal Mobile doc (distributed across industry) confirms nexus.
2000-06: Exxon spent $55 million on lobbying over six years.
2002-10: $558M from 140 philanthropic foundations to 91 “CCCC” organizations.
2009: Climategate – The Climate Research Unit at University of East Anglia is hacked; thousands of emails / files distributed just weeks before Copenhagen; Skeptics argue global warming is a conspiracy; Eight committees investigated the allegations and found no evidence of fraud or misconduct.
Scale of Money at Stake (~$20 Trillion)

- 2012: Bill McKibben’s Rolling Stone article sets a ceiling of 565 gigatons (GT) carbon that can be burned to limit warming to 2°C above pre-industrial levels.
  - Fossil fuel companies had proven coal and oil reserves of over five times that.
  - A 565 GT carbon ceiling (i.e. keep remainder in the ground) equated to writing off $20T in assets.
The Big Picture

How relationships between entrenched interests collaborate with think tanks and CCCM orgs to promote climate skepticism to the general public.
Tactics to Promote CCCM

- Funding conservative think tanks
  - Produce environmental skepticism literature – including casting doubt on climate science
- Direct corporate funding of climate skeptic information
- Funding “astroturf” organizations posing as grassroots efforts
- Labeling environmentalists as extremists and anti-American
- Successfully pressured mainstream media to present “both sides” of climate debate
- Revolving door between political office, conservative think tanks
Role of Conservative Think Thanks: Heartland and ALEC

- **ALEC – 501(c)(3) conservative think tank that advocates free-market policies**
  - Propagates model legislation through its network of about 2,000 legislators
  - As many non-profits, does not disclose membership or sources of funding
    - Awarded Charles and David Koch its Adam Smith Free Enterprise Award in 1994
    - Received $1,474,200 from Exxon Mobile between 1998 and 2012
    - Received $150K from Koch brothers in 2011

- **Heartland 501(c)(3) libertarian think tank**
  - Periodic magazines sent to elected officials: Economy, Health, Environment
    - Its 2009 "International Conference on Climate Change" received $47M in sponsorships from energy companies and conservative foundations
    - Received $25K from Koch in 2011 and $200,000 in 2012

- **ALEC & Heartland frequently work together**
  - Rollback renewable portfolio standards, net metering
  - Mandate the teaching of climate change denial in public schools (bills CO, OK, AZ)
Funding the CCCM

Drexel Study from 2002-2010: $558M in traceable income from 140 philanthropic foundations to 91 CCCM organizations (total income over $7B)

- Largest donor foundations: Donor’s Trust and Donor’s Capital Fund
  - Over $78M flowed through donor directed foundations preserving the anonymity of CCCM resources
- Think Tanks were largest recipients
  - American Enterprise Institute, Heritage Foundation, and Cato Institute combined received over 36% of funding put toward CCCM organizations
Funding the CCCM cont.

- 2013: Greenpeace publishes similar numbers:
  - Found nearly $120M funneled to more than 100 CCCM organizations through Donor’s Trust and Donor’s Capital Fund between 2002 - 2010

- Koch-run foundation Knowledge and Progress Fund initiated a pattern of large grants to Donor’s Trust in 2008 – roughly when Koch’s traceable giving to CCCMs declined
Disseminating CCCM Messages

- Study of 141 books that promote environmental skepticism showed >92% had a clear link to conservative think tanks.
- 45 of 50 conservative think tank websites promoted science skepticism.

**EXXON**

- 2015: Accusations surface that Exxon had spread doubt about climate science despite its own research supporting the validity of climate change.
  - Inside Climate News; LA Times; Columbia University’s Graduate School of Journalism.
  - Publically accessible documents were more likely to cast doubt on climate science.
Where Are We Now?

LAW & POLICY
Long ago in a galaxy far far away...

Boulder-based Namasté Solar’s Blake Jones introduces President Barack Obama to sign the ARRA into Law.

Denver – 2/17/09
Trump Administration

- EO ordered review Obama’s ban of offshore gas drilling (Arctic).
- Proposed auction of O&G leases of 77M acres of waters in the Gulf of Mexico (48B barrels of oil / 141T cf of gas = 28B tons of CO2).
- EO to scrap Clean Power Plan: CPP proposed power sector would cut 32% CO2 by 2030 (870M tons) avoiding 1,500 - 3,600 premature deaths and 90K asthma attacks in children. (Trump Admin disputes these health hazard estimates.)

columbiaclimatelaw.com/resources/climate-deregulation-tracker
EO downplays costs of CC, walks back tracking of fed GHG emissions, rescinds 2016 moratorium on coal leases on fed lands, and strikes efforts to prepare for climate change impacts, including threats to national security.

Suspended study of health risks to those who live near mtn-top coal mines in Appalachia.

EPA faces proposed 31% budget cut (23% cut to enforcement).

Scrubbed climate content on multiple Agency web sites.

Proposed shrinking National Monuments e.g. Bears Ears.

Pulled out of Paris Climate Accord.
We Are Still In

Nine states, hundreds of cities, many Tribes and universities, and over 1,700 corporations in the U.S. declared they will continue to implement policies/practices to meet GHG commitments of the Paris accord.

- **Hawaii**: *the most aggressive renewable energy targets in the U.S.* - aiming for utilities to hit 100% from renewable sources by 2045.
- **California**: committed to cut GHG emissions to 40% below 1990 levels by 2030.
- **RGGI**: Regional GHG Initiative is a cooperative cap and trade effort among 9 states: CT, NY, DE, ME, MD, MA, NH, RI and VT
  - **Texas**: produces more wind power than any other state (12.6% of TX’s electricity)
Most states on track to meet CPP goals

“Coal-fired power plants — the most climate-polluting source of electricity — are shutting down across the country. More than 500 closed between 2002 and 2016, and additional plants are slated for closure, according to the DOE. Electric utilities are replacing them with cheaper, cleaner natural gas. And renewable sources, such as wind and solar, are booming. Prices have plummeted.”

Voice of America News 11/1/17
What Is Being Done?

LEGAL CHALLENGES
U.S. Climate Change Litigation
Columbia Law School and Arnold & Porter

**FEDERAL STATUTORY CLAIMS**
- Clean Air Act [152]
- End. Species Act (& other protections) [75]
- Clean Water Act [19]
- NEPA [149 Cases]
- Freedom of Information Act [31]
- Other Statutes and Regulations [52]

**CONSTITUTIONAL CLAIMS**
- Commerce Clause [10]
- First Amendment [3]
- Fifth Amendment [6]
- Fourteenth Amendment [4]
- Other Constitutional Claims [13]

**STATE LAW CLAIMS**
- Industry Lawsuits[24]
- Environmentalist Lawsuits[25]
- State Impact Assessment Laws[134]
- Enforcement Cases [15]
- Utility Regulation [14]

**COMMON LAW CLAIMS [16]**

**PUBLICTRUST CLAIMS [18]**
○ **Action against Exxon**
  ◦ NY AG Eric Schneiderman and MA AG Maura Healy - investigate Exxon for possible fraud against its shareholders and the public
  ◦ SEC began investigating Exxon to determine if Exxon appropriately disclosed the business risks of climate change (internal documents re CC date back to 1981)
  ◦ Shareholder class action lawsuit
  ◦ Shareholders approve proposal requiring Exxon to be more transparent

○ **Challenges to rollbacks** of EPA and DOI environmental regulations
  ○ For example, facing a 16-state lawsuit, EPA dropped its decision to delay Obama-era ozone regs

○ **Environmental damage litigation**
  ○ Our Children’s Trust Litigation (public trust doctrine)
Where Are We Now?

MARKET FORCES
Market Forces

Renewables now dominate new U.S. capacity

2015: gas fell to 2nd behind wind and solar

2016: solar was 40% of new additions (including DG) and wind was another 30%

U.S. Electricity Sources 2016

U.S. Generation Capacity Additions, 2016 (Total 28.5 GW)

Slide credits: USC & Julie Blunden Consulting
Barriers

- **Capital Costs** (2017 averages)
  - $2,000/kw large solar; $3,700 for residential
  - $1,200 to $1,700/kw wind
  - $1,000/kw new natural gas plant

- **Siting and Transmission**

- **Market Entry** (Davis vs Goliath)

- **Unequal Playing Field** ($37B in fossil fuel subsidies per year)

- **Reliability Misconceptions**
  - Modern grid technologies are helping: advanced batteries / real-time pricing / smart appliances
Market Forces

Renewable prices are plummeting

No new coal leases despite Trump Administration lifting coal moratorium

No new coal plants planned

Slide credit: Julie Blunden Consulting
Market Forces

Mass manufactured technologies inherently reduce in cost with increased scale

Both EVs and stationary storage will benefit from cost reductions with increased scale

Slide credit: Julie Blunden Consulting
“We are convinced the future is electric.”

Dave Prystash
GM CFO Global Product Development
6/17

“American automotive giant announced that it is working toward an all-electric, zero-emissions future. That starts with two new, fully electric models next year—then at least 18 more by 2023.”

WIRED - 10/17
Clean Energy Financing

“More than $90 billion in green bonds has been floated so far this year, a level expected to reach $100 billion by year’s end, with some predictions as high as $130 billion. This is a dramatic increase from the $8 or $9 billion in financing just a few years ago.”

Christiana Figueres
Exec Sec of UNFCCC 2010-2016
Washington Post, 11/17
Where Are We Now?

PUBLIC OPINION
Public Opinion on Climate Change
PEW – 2016

48% believe human activity is the primary cause of climate change (about the same as in 2014 & 2009)

Only 1/3 of the public gives climate scientists high marks for their understanding of climate change

Trust and confidence varies widely depending on political orientation
68% of Americans believe the increases in Earth’s temperatures are mainly due to the effects of pollution from human activities – highest ever

American’s concern regarding global warming has fluctuated since the 90s
## Clean Energy Policy Support 2014

<table>
<thead>
<tr>
<th>Policy</th>
<th>Support</th>
<th>Oppose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fund research into renewable energy sources</td>
<td>60%</td>
<td>40%</td>
</tr>
<tr>
<td>Regulate CO2 as a pollutant</td>
<td>74%</td>
<td>25%</td>
</tr>
<tr>
<td>Set strict CO2 limits on existing coal-fired power plants</td>
<td>63%</td>
<td>37%</td>
</tr>
<tr>
<td>Require utilities to produce 20% electricity from renewable sources</td>
<td>61%</td>
<td>39%</td>
</tr>
<tr>
<td>A carbon tax if refunded to every American household</td>
<td>44%</td>
<td>56%</td>
</tr>
</tbody>
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Where Are We Now?

EFFECTIVE COMMUNICATION
Communicating Climate Science/Policy in a Politicized World

- You are a Thought Leader
- Understand your Audience
- Create Relatable Context
- Provide a Path to a Desirable Future
Designer News: “At myFACTS, we believe everyone is entitled to their own set of facts!”
To give Facts a Fighting Chance...

Affiliations increase acceptance so choose the right messengers

The Pentagon calls climate change a de-stabilizing geopolitical force & a “threat multiplier.”
My meteorologist / uncle who’s a farmer / minister / boss / Fortune 500 says...
Strange Bedfellows, gather a wide range of diverse believers to cite as examples.

Winning Hearts & Minds
Unstable weather patterns; Jet stream shifting; Shorter winters; Earlier spring runoff; Erratic precipitation; Higher temps & longer droughts; Increased # of & intensity of wildfires; Air quality.

So how does any of that us here?

Jobs jobs jobs, & Economic development.
Quality of life, Tourism (hiking, fishing, scenic beauty).

Our Quality of Life is at Risk
“Don’t sell the sausage, sell the sizzle.”

1940s super salesman, Elmer Wheeler

People are more willing to face a problem when they believe there are solutions.

- Provide vision of a bright future (the sizzle)
- Provide a pathway of relatable solutions & actions
- Only then discuss the consequences of inaction on what they hold dear.

“Without being incentivized, excited or inspired by an aspirational ideal of where we might go as a society, few of us will act.”

Futerra Communications