



## **PANDORA'S PEOPLE**

The truth behind the protagonists of the new pro-nuclear documentary, *Pandora's Promise*

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### **WHAT WE FOUND**

- ☐ Although the film promotes itself as “*anchored around the personal narratives of a growing number of leading former anti-nuclear activists,*” none of the film’s subjects was ever a leader of the anti-nuclear movement.
- ☐ The protagonists were either not ever anti-nuclear, or were “somewhat against it,” but were never a high-profile or an outspoken critic of nuclear power. Their authority to speak on it now, and the rationale for anyone to care what they think, is debatable.
- ☐ Deliberately or not, director Robert Stone chose not to interview individuals with real authority and credentials related to the topics he covered. If he had done so, even without including them in his film, and then still concluded that nuclear power was the answer to climate change, his credibility would have been intact.
- ☐ The film’s protagonists choose information selectively and deliberately omit factual details that contradict their “point of view.” The omissions would effectively debunk many of their arguments.
- ☐ The film’s publicity endeavors to sell the concept of “environmentalists for nuclear energy” to suggest that there is a significant trend among environmentalists toward support of nuclear energy. On the strength of those advanced in the film, there is no evidence of this.
- ☐ Given the tone and content of the film, and the advance publicity, *Pandora's Promise* appears to be a vehicle with which to promote the interests of *The Breakthrough Institute*, whose personnel are prominently featured in the film.

## BACKGROUND

*Pandora's Promise*<sup>1</sup> is a new documentary by Robert Stone whose website, [Robert Stone Productions](http://robertstoneproductions.com/pandoras-promise/),<sup>2</sup> proclaims: “*The film is anchored around the personal narratives of a growing number of leading former anti-nuclear activists and pioneering scientists.*”<sup>3</sup> The film’s website also asserts that nuclear power is “*now passionately embraced by many of those who once led the charge against it.*”<sup>4</sup>

**Our research found that there is no evidence that any member of the “cast” of *Pandora’s Promise* ever led the anti-nuclear movement.**

The film’s participants advocate for the deployment of the Integral Fast Reactor (IFR) as the best pathway to addressing climate change, a canceled breeder reactor design whose so-called “Generation IV” iteration, re-considered by the George W. Bush administration, does not exist anywhere in the world.<sup>5</sup>

If Stone had interviewed those with the authority and credentials in the areas he covers — even without featuring them in his film — and then still come to the conclusions he has today reached, his credibility might be intact. But Stone apparently chose not to talk to those with genuine research credentials and depth of knowledge on the issue and whose evidence would have contradicted his film’s protagonists. Therefore, we must reluctantly conclude that Stone’s agenda was to produce a propaganda piece.

This conclusion is further compounded by Stone’s self-confessed “*aha moment*” when he was “*granted entry into a room in France (the size of a basketball court) where all the waste from powering 80% of the country for 30 years is stored.*”

But this room, located at the La Hague reprocessing facility, contains in vitrified form only 4% of the country’s high-level waste, and none of the intermediate- and low-level waste, none of the plutonium or contaminated uranium, nor of course the waste still at, and being generated by, France’s operating reactors. (The French nuclear industry exempts irradiated and reprocessed reactor fuel from being classified as “waste” it it “*could be potentially reused at an undefined time in the future*” allowing for the

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<sup>1</sup> <http://pandoraspromise.com>

<sup>2</sup> <http://robertstoneproductions.com/pandoras-promise/>

<sup>3</sup> Ibid. Robert Stone Productions.

<sup>4</sup> Ibid.

<sup>5</sup> [http://www.beyondnuclear.org/storage/documents/BN\\_Final\\_FullFactsheet\\_IFR\\_Jan2013.pdf](http://www.beyondnuclear.org/storage/documents/BN_Final_FullFactsheet_IFR_Jan2013.pdf). *Pandora’s False Promises. Integral Fast Reactor: Facts and Myths*. A Beyond Nuclear Fact Sheet. January 2013.

misrepresentation made to Stone at La Hague).<sup>6</sup> The premise for making the film was therefore based on, at best, a mistaken impression.

Here we fact check the credentials of those members of the *Pandora's Promise* “cast” who allegedly fit the profile of “*leading former anti-nuclear activists*.” (The film also includes two scientists who worked on the original IFR program at the Argonne National Laboratory, Len Koch and Charles Till, not profiled here, whose vested interest in the technology is self-evident).

The film’s publicity follows earlier propaganda put out by the nuclear industry itself which alleged that a growing number of environmentalists had “changed their minds” and now support nuclear power. However, those so-called “turncoats” featured paid nuclear industry promoters like Christie Todd Whitman<sup>7</sup> and the now retired Patrick Moore<sup>8</sup> who are notably absent from *Pandora's Promise*.

The film’s claims appear designed to feed a media campaign with a catchy theme — “environmentalists for nuclear energy”<sup>9</sup> — made easier by a tendency in the media to lap up rhetoric without checking facts. One example: “*Stone interviews a major swath of environmentalists, scientists, and energy planners, all of whom spent years being anti-nuclear power.*”<sup>10</sup>

The theme likely emanates from the filmmakers’ partnership with The Breakthrough Institute — whose personnel feature prominently in the film — which will “*initiate a broad based outreach campaign*” and involve “*a comprehensive website and social media presence.*”<sup>11</sup> This campaign has already begun.

Joe Romm, a Senior Fellow at American Progress who holds a Ph.D in physics from MIT, has warned of The Breakthrough Institute’s “*anti-climate-action, anti-environmental agenda*” for years. In May 2009 he wrote:

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<sup>6</sup> <http://fissilematerials.org/library/rr04.pdf> *Spent Nuclear Fuel Reprocessing in France*. By Mycle Schneider and Yves Marignac. A research report of the International Panel on Fissile Materials. April 2008.

<sup>7</sup> <http://casenergy.org>

<sup>8</sup> Ibid.

<sup>9</sup> <http://walker-foundation.org/net/org/project.aspx?s=89399.0.69.5316>. Project report by Robert Stone to the Alex C. Walker Foundation.

<sup>10</sup> <http://insidemovies.ew.com/2013/01/24/why-is-the-way-way-back-a-crowd-pleaser/>. ‘*Pandora's Promise*,’ a radically sane and important documentary about how nuclear power could save us. By Owen Gleiberman. Inside Movies. January 24, 2013.

<sup>11</sup> Ibid. Project report by Robert Stone to the Alex C. Walker Foundation.

***“I can’t imagine why any serious journalist would cite the work of The Breakthrough Institute (TBI) — except to debunk it. As we’ll see once again, they constantly misstate and misrepresent what others say, and generally put out very bad analysis designed to push their anti-climate-action, anti-environmental agenda.”***<sup>12</sup>

Breakthrough’s founder and president, Michael Shellenberger, its favorite journalist,<sup>13</sup> Mark Lynas (although the url still exists, his bio appears to have been pulled from the Institute’s Web site), and its Senior Fellow, author Gwyneth Cravens, all feature prominently in the film. On February 1, 2013, The Breakthrough Institute lavished further praise on Lynas with its 2012 Paradigm Award.<sup>14</sup> We include Romm’s investigative work on The Breakthrough Institute at the end of this document.

The film’s technological poster child is the sodium-cooled Integral Fast Reactor (IFR), a breeder reactor that both uses and produces plutonium but would be used to “burn” irradiated reactor waste. In a separate Beyond Nuclear Fact Sheet<sup>15</sup> we show that the film’s claims for the IFR are also rife with critical omissions and fail to present the complete picture about the risks, costs and impracticalities.

## THE PANDORA’S PROMISE “CAST”

**STEWART BRAND** is a businessman, futurist, and publisher, and is best known as the founder of the Whole Earth catalogue. He was also a former consultant for Shell.<sup>16</sup> Brand admits that far from being a leading opponent of nuclear energy, he *“had been somewhat against it”* and *“I’m so strongly for it now that even if climate change wasn’t an issue, I’d still be pushing it.”*<sup>17</sup> He is also an enthusiastic promoter of genetic engineering in agriculture and *“gushes about the technology in a way that might raise a blush even in a spokesman for Monsanto.”*<sup>18</sup> Brand is a co-founder of Global Business

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<sup>12</sup> <http://thinkprogress.org/climate/2009/05/22/204144/waxman-markey-offsets-breakthrough-institute-shellenberger-nordhaus-media/>. *Memo to media: Don’t be suckered by bad analyses from the Breakthrough Institute the way Time, WSJ, NPR and The New Republic have been.* By Joe Romm. Climate Progress. May 22, 2009.

<sup>13</sup> <http://thebreakthrough.org/people/profile/Mark-Lynas>

<sup>14</sup> <http://thebreakthrough.org/index.php/dialogue/paradigm-award-winners/mark-lynas-receives-2012-paradigm-award/>

<sup>15</sup> Ibid. *Pandora’s False Promises. Integral Fast Reactor: Facts and Myths.*

<sup>16</sup> <http://www.guardian.co.uk/education/2001/aug/04/artsandhumanities.highereducation>. *The Guardian Profile.* By Andrew Brown. The Guardian. August 3, 2001.

<sup>17</sup> <http://www.guardian.co.uk/environment/2010/oct/03/my-bright-idea-stewart-brand>. *Stewart Brand: My plan B for climate change.* By Damian Carrington. The Observer. October 2, 2010.

<sup>18</sup> <http://www.ft.com/intl/cms/s/0/3719b9bc-0161-11df-8c54-00144feabdc0.html#axzz2luJVPUEs>. *Whole Earth Discipline. Green campaigner Stewart Brand makes a case for nuclear power and genetic engineering.* Review by Clive Cookson. Financial Times. January 18, 2010.

Network. In 2007, research by Greenpeace UK<sup>19</sup> and Fairness & Accuracy in Reporting,<sup>20</sup> found at the time “among the 192 clients named on its website ([www.gbn.com](http://www.gbn.com)), more than a dozen corporations and governmental agencies are involved in the production or promotion of nuclear energy: General Electric, Bechtel, Duke Power, Siemens-Westinghouse, Fluor, Electric Power Research Institute, Pacific Gas & Electric, Southern California Edison, Électricité de France, Iberdrola, Vattenfall, Sydkraft (now E.ON Sweden) and Sandia National Laboratories.”

**GWYNETH CRAVENS** is an American novelist and journalist who specializes in fiction. To date, she has published five novels. She is a Senior Fellow at The Breakthrough Institute. Her book, *Power to Save the World*, contains a number of interesting errata.<sup>21</sup> According to her [website](http://www.cravenspowertosavetheworld.com),<sup>22</sup> Cravens was “initially a skeptic about nuclear power,” and is therefore, by her own admission, far from a “leading former anti-nuclear activist.” Her expertise on the subject is highly questionable. One example: “If you just leave a reactor alone, it will shut itself down. If a reactor doesn't have enough water, it will shut itself down.”<sup>23</sup> Cravens’ broad brush assertion is patently inaccurate. The triple meltdowns at the Fukushima Daiichi reactors in Japan vividly demonstrated the real consequences of the loss of coolant water and the failure of emergency core coolings systems as a result of the prolonged loss of electrical power to reactor safety systems. As *Scientific American* explained in its primer to readers shortly after the Fukushima nuclear disaster began: “Without a steady coolant supply, a hot reactor core will continuously boil off the water surrounding it until the fuel is no longer immersed. If fuel rods remain uncovered, they may begin to melt, and hot, radioactive fuel can pool at the bottom of the vessel containing the reactor. [In a worst-case meltdown scenario](#) the puddle of hot fuel could melt through the steel containment vessel and through subsequent barriers meant to contain the nuclear material, exposing massive quantities of radioactivity to the outside world.”<sup>24</sup>

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<sup>19</sup> <http://www.greenpeace.org.uk/climate/why-would-channel-4-attempt-discredit-environmental-movement>. Why would Channel 4 attempt to discredit the environmental movement? Undated. Greenpeace UK.

<sup>20</sup> <http://fair.org/take-action/action-alerts/npr-touts-pro-nuke-environmentalists/>. NPR Touts Pro-Nuke ‘Environmentalists’. Network’s own nuclear links undisclosed. Fairness in Accuracy & Reporting. August 22, 2007.

<sup>21</sup> [http://www.chris-winter.com/Erudition/Reviews/G\\_Cravens/GC1\\_Errata.html](http://www.chris-winter.com/Erudition/Reviews/G_Cravens/GC1_Errata.html) *Power to Save the World; Errata*. Compiled by Chris Winter. April 13, 2010.

<sup>22</sup> <http://cravenspowertosavetheworld.com>.

<sup>23</sup> [http://www.wired.com/science/planetearth/news/2007/12/nuclear\\_qa?currentPage=all](http://www.wired.com/science/planetearth/news/2007/12/nuclear_qa?currentPage=all). Former ‘No Nukes’ Protester: Stop Worrying and Love Nuclear Power. By John Borland. WIRED. December 7, 2007.

<sup>24</sup> <http://www.scientificamerican.com/article.cfm?id=nuclear-energy-primer>. What Happens During a Nuclear Meltdown. By John Matson. Scientific American. March 15, 2011.



**MARK LYNAS** is a British author and journalist who contributed to a BBC television program in 2010, *What the Green Movement Got Wrong*, which was criticized for inaccuracies and omissions. “Major issues to do with nuclear energy had been ignored — the fact that it has never been economic, has too long a lead time to be a quick enough response to climate change, depends on a nation-wide secure electrical power grid which India (for instance) doesn’t have, and is linked to weapons technology.”<sup>25</sup> According to Romm, in 2011 Lynas penned “the most egregiously [error-riddled paragraph](#) published in a presumably fact-checked newspaper op-ed.”<sup>26</sup> (Ironically, Lynas attributed the errors to figures sourced from The Breakthrough Institute).<sup>27</sup> He has chosen to believe the non-credible and scientifically disputed Chernobyl death numbers (4,000 “eventually”) released by the World Health Organization<sup>28</sup>, an entity that is under the control of the nuclear energy-promoting International Atomic Energy Agency.<sup>29</sup> He proclaims Chernobyl as “a win for biodiversity,”<sup>30</sup> despite evidence of diminished life-spans and mutations<sup>31</sup> among the wildlife populations in the Chernobyl zone.<sup>32</sup> Although he claims to be a “convert” to the pro-nuclear scene, he has no history as a former activist in, or *leader* of, the anti-nuclear movement. His most recent pro-nuclear op-ed, published by The Breakthrough Institute, attacks Germany’s energy transition and claims that “nuclear power still provides more electricity in Germany than wind and solar put together adding up to 16%.”<sup>33</sup> But according to the German Federal Association of the Energy and Water Industry, in 2012 “Renewable power could report further growth

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<sup>25</sup> <http://oxford.greenparty.org.uk/news/what-the-green-movement-gets-right.html>. *What the Green movement gets right*. By Dick Wolf. Oxfordshire Green Party. November 5, 2012.

<sup>26</sup> <http://thinkprogress.org/climate/2011/04/13/207880/mark-lynas-error-cost-nuke-op-ed/>. *Mark Lynas pens error-riddled, cost-less nuke op-ed*. By Joe Romm. Climate Progress. April 13, 2011.

<sup>27</sup> <http://www.marklynas.org/2011/04/how-much-of-japans-land-area-would-be-needed-to-replace-nuclear-with-wind/> *How much of Japan’s land area would be needed to replace nuclear with wind?* By Mark Lynas. MarkLynas.org. April 14, 2011.

<sup>28</sup> <http://www.who.int/mediacentre/news/releases/2005/pr38/en/index.html> *Chernobyl: the true scale of the accident. 20 Years Later a UN Report Provides Definitive Answers and Ways to Repair Lives*. Joint News Release WHO/IAEA/UNDP. September 5, 2005.

<sup>29</sup> <http://www.guardian.co.uk/commentisfree/2009/may/28/who-nuclear-power-chernobyl>. *Toxic Link: the WHO and the IAEA*. By Oliver Tickell, The Guardian. May 28, 2009.

<sup>30</sup> [http://e360.yale.edu/feature/britains\\_mark\\_lynas\\_riles\\_his\\_green\\_movement\\_allies/2449/](http://e360.yale.edu/feature/britains_mark_lynas_riles_his_green_movement_allies/2449/) *Britain’s Mark Lynas Riles His Green Movement Allies*. By Keith Kloor. Environment 360. October 19, 2011.

<sup>31</sup> [http://cricket.biol.sc.edu/chernobyl/Chernobyl\\_Research\\_Initiative/Summary\\_of\\_Key\\_Findings.html](http://cricket.biol.sc.edu/chernobyl/Chernobyl_Research_Initiative/Summary_of_Key_Findings.html). *Chernobyl Research Initiative*. University of South Carolina. Dr. Tim Mousseau.

<sup>32</sup> <http://artsandsciences.sc.edu/greenquad/node/92> *Chernobyl Wildlife Tell Unexpected Story of Mutation and Population Decline*. By Timothy Mousseau. University of South Carolina.

<sup>33</sup> <http://thebreakthrough.org/index.php/programs/energy-and-climate/a-squandered-opportunity/>. *A Squandered Opportunity*. By Mark Lynas. The Breakthrough Institute website. January 17, 2013.

contributing 21.9% to the electricity mix (2011: 20.3%).”<sup>34</sup> The 16% figure was accurate only for nuclear-generated electricity.

**RICHARD RHODES**, is an authority on the history of the atomic bomb and the Pulitzer prize-winning author of *The Making of the Atomic Bomb*, published in 1986. However, there is no evidence to suggest he was ever against nuclear energy. To the contrary, his 1993 book, *Nuclear Renewal: Commonsense about Energy*, strongly promotes the use of nuclear power. In an interview in [Daily Kos](#) he describes himself as being, in the 1970s, “knee-jerk anti-nuclear in those days and very skeptical”<sup>35</sup> but today is a proponent of reprocessing and of storing all radioactive waste at the Waste Isolation Pilot Project in New Mexico.<sup>36</sup> According to a review of *Nuclear Renewal*, now laden with the irony of hindsight, Rhodes says: “[US] Reactor makers right through the 50s sought to make their inventions perfect and infallible. This led not only to an inordinate amount of time in their development, but to painstaking attention to a goal that was absurdly unachievable. The Japanese, on the other hand, never assumed in the first place that their reactors would be perfect and infallible. With this in mind, they instituted double the number of safety measures, as well as easy human entry to the reactors’ environs, which would make manual shutting down of the reactors much easier. Faith in human infallibility born of hubris comes, it seems, at the cost of pragmatic failure.”<sup>37</sup>

**MICHAEL SHELLENBERGER** is president of The Breakthrough Institute. He was a co-founder of [The Apollo Alliance](#) (now the BlueGreen Alliance)<sup>38</sup> which has never taken a position against nuclear power and there is no evidence to suggest that he was ever a part, and certainly not a leader, of the anti-nuclear movement. The Institute’s focus is largely directed towards [scathing criticisms of those actively working on climate change](#),<sup>39</sup> environmental justice, anti-nuclear campaigns etc. The Institute describes environmentalists as having “misplaced priorities,” the anti-nuclear movement as “fear-mongering” and view as “profoundly inadequate” the role of “present-day

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<sup>34</sup> <http://www.germanenergyblog.de/?p=11916>. BDEW Publishes Gas and Electricity Data for 2012. By Dr. Matthias Lang and Prof. Dr. U. Mutschler. German Energy Blog. January 11, 2013.

<sup>35</sup> <http://www.dailykos.com/story/2009/11/01/799409/-Bringing-Oppenheimer-Back-To-Life-An-Interview-With-Richard-Rhodes#> *Bringing Oppenheimer Back to Life: An Interview with Richard Rhodes*. By Page van der Linden. Daily Kos. November 1, 2009.

<sup>36</sup> Ibid.

<sup>37</sup> <http://nucleardreams.wordpress.com/category/richard-rhodes/>. *Nuclear Dreams*. Archive for ‘Richard Rhodes’ Category. *Before it’s too late*. October 29, 2007.

<sup>38</sup> <http://www.bluegreenalliance.org/apollo>

<sup>39</sup> <http://thinkprogress.org/climate/2011/02/15/207530/the-breakthrough-institute-attack-energy-efficiency-clean-energy-backfire-rebound-effect/> *Rebound effect: The Breakthrough Institute’s attack on clean energy backfires*. By Joe Romm. Climate Progress. February 15, 2011.

*renewables . . . as substitutes for fossil energy.*<sup>40</sup> On a January 28, 2013 episode of [The Colbert Report](#),<sup>41</sup> Shellenberger alleged that “*countries don’t pursue a nuclear weapon because they have nuclear energy*,” carefully omitting reference to the technological capability provided by supposedly civilian nuclear energy research programs that enabled North Korea, India, Pakistan, Israel and South Africa to do precisely that. The nuclear power program in France was designed initially to provide the plutonium for their nuclear weapons program.

## THE BREAKTHROUGH INSTITUTE

By Joe Romm, Climate Progress.

[On April 13, 2011, Joe Romm wrote](#).<sup>42</sup> “the Breakthrough Institute is not ‘a centrist environmental think tank,’ whatever that means. Whatever they once were, they are now a pro-nuclear, anti-clean-energy-deployment think tank that has partnered with the [American Enterprise Institute to push right-wing energy myths](#) and that routinely attacks energy efficiency programs, except when they [reverse themselves](#).”

[And on February 15, 2011, Romm wrote](#).<sup>43</sup> “Recently, the Breakthrough Institute launched a major attack on energy efficiency. They used talking points that right-wing think tanks have pushed for years (see [The intellectual bankruptcy of conservatism: Heritage even opposes energy efficiency](#)). This shouldn’t be terribly surprising to longtime followers of TBI. After all, last year they partnered with a right-wing think tank, the American Enterprise Institute, [to push right-wing energy myths](#) and attack the most basic of clean energy policies, a clean energy standard.

“This year, Breakthrough’s attacks on clean energy were used by the Republican National Committee as part of their overall attack on Obama’s clean energy agenda. Again, not a big surprise. TBI’s work is consistently cited by those who want to attack environmentalists and climate scientists, ‘[George Will embraces the anti-environmentalism — and anti-environment — message of The Breakthrough Institute](#).’<sup>44</sup>

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<sup>40</sup> [http://www.foreignpolicy.com/articles/2012/09/07/out\\_of\\_the\\_nuclear\\_closet?page=0.0](http://www.foreignpolicy.com/articles/2012/09/07/out_of_the_nuclear_closet?page=0.0). *Out of the Nuclear Closet*. By Jessica Lovering, Ted Nordhaus, Michael Shellenberger. Foreign Policy. September 7, 2012.

<sup>41</sup> <http://www.colbertnation.com/the-colbert-report-videos/423270/january-28-2013/michael-shellenberger>

<sup>42</sup> Ibid. *Mark Lynas pens error-riddled, cost-less nuke op-ed*.

<sup>43</sup> Ibid. *Rebound effect: The Breakthrough Institute’s attack on clean energy backfires*.

<sup>44</sup> <http://thinkprogress.org/climate/2009/06/04/204200/the-audacity-of-nope-george-anti-environment-message-of-the-breakthrough-institute-shellenberger-nordhaus/>. *The Audacity of Nope: George Will embraces the anti-environmentalism — and anti-environment — message of The Breakthrough Institute*. By Joe Romm. Climate Progress. June 4, 2009.



“Yes, I know, The Breakthrough Institute will insist it’s purely a coincidence that they are the darling of the anti-science, pro-pollution right-wing disinformers. The fact that they push right-wing myths and even partner with right-wing organizations to push those myths has nothing to do with it. Nor does the fact that they spent the past two years dedicating the resources of their organization to help kill prospects for climate and clean energy action — and to spread disinformation about Obama, Gore, Congressional leaders, Waxman and Markey, leading climate scientists, Al Gore again, the entire environmental community and anyone else trying to end our status quo energy policies (see ‘[Debunking Breakthrough Institute’s attacks on Obama, Gore, Waxman, top climate scientists, progressives, and environmentalists](#)’).<sup>45</sup> Nor does the fact that they even attacked Rachel Carson, who died decades ago after helping launch the modern environmental movement!

“The only reason I point this out is that the only reason the media pay any attention whatsoever to their endless shoddy analyses and misrepresentations and smears is that Breakthrough has tried to create the impression they are a progressive, environmental organization dedicated to promoting clean energy — so that when they launch their umpteenth attack on progressives and environmentalists and climate scientists and clean energy they can be seen as ‘contrarians.’ Stop the presses — here’s an environmental group saying environmentalists are doing the wrong thing. No, please, stop the presses already.”<sup>46</sup>

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<sup>45</sup> <http://thinkprogress.org/climate/2009/06/17/204250/the-breakthrough-institute-shellenberger-nordhaus-waxman-markey/>. *Debunking Breakthrough Institute’s attacks on Obama, Gore and top climate scientists*. By Joe Romm. Climate Progress. June 17, 2009.

<sup>46</sup> Ibid. *Rebound effect: The Breakthrough Institute’s attack on clean energy backfires*.