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# THE IMPORTANCE OF VENTURE CAPITALISM TO CLEAN TECHNOLOGY AND THE GOVERNMENT'S ROLE IN FOSTERING ITS DEVELOPMENT DURING THE RECESSION

by Janet Hager\*

Technological advancement in clean energy has become a key U.S. initiative because of its potential for spurring economic growth and creating energy independence.<sup>1</sup> Any attempt to encourage the development of clean technology in the United States must also foster venture capitalism in the sector.<sup>2</sup>


Venture capital plays an important role in the U.S. economy by creating jobs and revenue.<sup>3</sup> Venture capital firms pool the resources of many investors, which include individuals, pension funds, corporations, charities, and college endowments.<sup>4</sup> The firms then invest the pooled fund into new companies.<sup>5</sup> Venture capital has backed some of the most successful and innovative companies in the United States, including Apple, Google, Starbucks, and Whole Foods.<sup>6</sup> Venture capital is particularly important to technological innovation for two reasons. First, venture capital funds innovative projects that cannot gain access to traditional banking funds.<sup>7</sup> Second, venture capital drives technology forward by financing projects that will not be funded by larger companies because of their disruptive nature in the marketplace.<sup>8</sup>

Encouragingly, venture capital firms have already begun to tap into the new market of clean technology.<sup>9</sup> Market trends indicate a continual pull away from unsustainable sources of energy like petroleum and natural gas, so venture capitalists have begun to favor investments in renewable energy.<sup>10</sup> The clean technology sector has seen an extraordinary boom in investment capital in recent years.<sup>11</sup> In 2001 venture capital in clean technology made up less than one percent of total venture capital investments.<sup>12</sup> By 2008 however, venture capital in clean technology made up fifteen percent of the total venture capital invested.<sup>13</sup> Unfortunately, there are signs that the recession has finally caught up to venture capital investments in the industry.<sup>14</sup> In the first quarter of 2009, investments in the clean technology sector fell by forty-eight percent from the first quarter of 2008.<sup>15</sup>

The government does have the power to indirectly curb the effects of the recession on the clean technology venture capital market by implementing policies that make investments in the sector more attractive.<sup>16</sup> On February 17, 2009 Congress enacted the Recovery and Reinvestment Act of 2009, which includes eighty-three billion dollars of clean technology incentives.<sup>17</sup> The act emphasizes clean technology as a way to drive the economy and create jobs.<sup>18</sup> It will promote investments in clean technology in three key ways: direct grants, tax incentives, and loan

guarantees.<sup>19</sup> The incentives are primarily targeted at “smart grid technologies, advanced batteries, fundamental renewable energy research and a host of energy efficiency projects.”<sup>20</sup> Further, because venture companies in clean technology stand to benefit from the new influx of funding from the government, it is likely that investments of venture capital into these benefited companies will also be spurred.<sup>21</sup>

However, in order for the various new stimulus funds to be effective in helping the survival of clean technology companies struggling in the recession, the funds must be distributed quickly and effectively.<sup>22</sup> The ability of the government to meet this goal is questionable. For example, one loan guarantee program, established in 2005 by the Department of Energy (“DOE”) under the Energy Policy Act of 2005, was plagued by a four-year hold on disbursement, where none of the available grant money was distributed.<sup>23</sup> The stimulus bill allotted an additional six billion dollars to this same loan grant program.<sup>24</sup> The new funds in the stimulus need to be distributed much more quickly than they have been under the Energy Policy Act of 2005 if they are to stand a chance at preventing “a raft of potential bankruptcies or crippling retrenchments through 2009” among clean technology companies.<sup>25</sup>

Quick disbursement is all the more essential as other countries enter the race to develop the best new clean technologies. Recently, China announced that it intended to become the world's leader in hybrid and all-electric vehicles.<sup>26</sup> This announcement comes at the same time as the United States' first all-electric mass-manufactured vehicle is waiting for federal aid from the DOE's loan guarantee program.<sup>27</sup> Encouragingly, however, there are signs that the inertia in federal government to disburse funds is coming to an end. The DOE has gained momentum with the arrival of Stephen Chu, the new Secretary of Energy.<sup>28</sup> Chu has made disbursement of the loan guarantees a priority, and the first alternative energy loan was finally awarded.<sup>29</sup> If more releases of stimulus funds into clean technology follow, there is reason to be optimistic that venture capitalism in clean technology will recover as the funds put new life into the industry.<sup>30</sup> 

**Endnotes:** The Importance of Venture Capitalism to Clean Technology *continued on page 64*

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## ENDNOTES: THE IMPORTANCE OF VENTURE CAPITALISM TO CLEAN TECHNOLOGY *continued from page 25*

<sup>1</sup> See Martin LaMonica, *Obama Signs Stimulus Plan, Touts Clean Energy*, CNET, Feb. 17, 2009, [http://news.cnet.com/8301-11128\\_3-10165605-54.html](http://news.cnet.com/8301-11128_3-10165605-54.html) (explaining that President Obama hopes the investment of the U.S. government in clean technology will help to fuel innovation in the field and make the economy stronger).

<sup>2</sup> See Bill Moore & Rolf Wüstenhagen, *Innovative and Sustainable Energy Technologies: The Role of Venture Capital*, 13 BUS. STRAT. & ENV'T. 235, 240 (2004) (“Historically, venture capital and all forms of new venture financing have played a critical role in new business formation and technological transformation.”).

<sup>3</sup> See GLOBAL INSIGHT, *VENTURE IMPACT: THE ECONOMIC IMPORTANCE OF VENTURE CAPITAL BACKED COMPANIES TO THE U.S. ECONOMY* 5 (3d ed. 2007) (noting that, in 2005, venture capital created ten million jobs and 2.1 trillion in revenue).

<sup>4</sup> *Id.* at 10-11.

<sup>5</sup> *Id.* at 10.

<sup>6</sup> *Id.* at 8-9.

<sup>7</sup> *Id.* at 8.

<sup>8</sup> GLOBAL INSIGHT, *supra* note 3, at 10 (advancing that technologies backed by venture capital have the potential to “cannibalize” the products of larger companies that are already on the market). Furthermore, companies tend to cut spending on research and development, which means that viable employee ideas may be turned down by the company. *Id.* at 10.

<sup>9</sup> See Andrzej Zwanecki, *Venture Capitalists Boost Clean-Energy Technology*, AMERICA.GOV, Mar. 5, 2008, available at <http://www.america.gov/st/env-english/2008/March/20080305112303saikceinawz0.5196497.html> (claiming investors have “flocked” to the clean-technology sector recently).

<sup>10</sup> See *id.* (“U.S. venture capitalists are bullish about clean-tech prospects because they say the development of renewable energy, green buildings and other energy-efficient technologies is driven by long-term trends—such as rising energy consumption and prices and concern about climate change and future supplies of petroleum and natural gas.”).

<sup>11</sup> See Anupreeta Das, *Cleantech Funding Rising, May Overvalue Sector: VCs*, REUTERS, Jan. 8, 2008, <http://www.reuters.com/article/environmentNews/idUSN0842895820080109> (observing that clean technology investments increased by 341% between 2000 and 2007).

<sup>12</sup> Zwanecki, *supra* note 9.

<sup>13</sup> Press Release, PriceWaterhouseCoopers, *Venture Investment in Clean Technology Accelerates Significantly in 2008, Despite Economic Uncertainty* (Jan. 24, 2009), available at <http://www.pwc.com/extweb/ncpressrelease.nsf/docid/488E9029CC2802708525754A005BF36>.

<sup>14</sup> See Kate Galbraith, *Clean Technology Venture Funding Fell 48% in First Quarter*, N.Y. TIMES, Apr. 1, 2009, <http://greeninc.blogs.nytimes.com/2009/04/01/cleantech-venture-funding-plunges/> (stating that the venture capital investments into clean technology fell in the last quarter of 2008 and the first quarter of 2009).

<sup>15</sup> *Id.*

<sup>16</sup> See Moore & Wüstenhagen, *supra* note 2, at 243 (giving examples of ways in which the government can make investments into sustainable energy venture

more attractive, including research and development subsidies and taxes on fossil fuels); see also Zwanecki, *supra* note 9 (suggesting that shifts in governmental policy is contributing to the growth of interest in clean technology).

<sup>17</sup> American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, 123 Stat. 115 (2009); PRICEWATERHOUSECOOPERS, *CLEANTECH NATION: CLEANTECH PLAYING A CENTRAL ROLE IN THE NATIONAL RECOVERY AGENDA* 1 (2009), available at [http://www.pwc.com/images/us/eng/about/pov/PwC\\_PointofView\\_Cleantech.pdf](http://www.pwc.com/images/us/eng/about/pov/PwC_PointofView_Cleantech.pdf) (last visited Apr. 11, 2009).

<sup>18</sup> See *id.* at 1.

<sup>19</sup> See LATHAM & WATKINS, *CLIENT ALERT: AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009—IMPLICATIONS FOR CLEANTECH COMPANIES AND INVESTMENT* 1 (2009), available at [http://www.lw.com/upload/pubContent/\\_pdf/pub2518\\_1.pdf](http://www.lw.com/upload/pubContent/_pdf/pub2518_1.pdf) (determining that the industry incentives will promote public and private investment in clean technology).

<sup>20</sup> *Id.*

<sup>21</sup> See PRICEWATERHOUSECOOPERS, *CLEANTECH NATION*, *supra* note 17, at 2 (suggesting that investors in companies that are becoming a part of the new energy infrastructure created by the stimulus stand to benefit).

<sup>22</sup> LATHAM & WATKINS, *supra* note 19, at 1.

<sup>23</sup> See John M. Broder, *Energy Department Issues First Renewable-Energy Loan Guarantee*, N.Y. TIMES (Mar. 20, 2009), available at <http://greeninc.blogs.nytimes.com/2009/03/20/energy-department-issues-first-renewable-energy-loan-guarantee/?ref=business> (explaining that the loan program of the DOE has been “hindered by bureaucratic inertia and lengthy reviews of hundreds of applications for more than \$40 billion in loan guarantees”).

<sup>24</sup> MAYER BROWN, *CLIENT ALERT: DEPARTMENT OF ENERGY LOAN GUARANTEE PROGRAM SIGNIFICANTLY EXPANDED BY AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009* 1 (2009), available at <http://www.mayerbrown.com/publications/article.asp?id=6333&nid=6>; see Department of Energy, *Overview of the American Recovery and Reinvestment Act of 2009*, <http://www.energy.gov/recovery> (last visited Apr. 7, 2009) (giving a breakdown of the authorized funds allotted to the Department of Energy in the Resource and Recovery Act).

<sup>25</sup> See PRICEWATERHOUSECOOPERS, *CLEANTECH NATION*, *supra* note 17, at 3.

<sup>26</sup> Keith Bradsher, *China Vies to Be World’s Leader in Electric Cars*, N.Y. TIMES, Apr. 1, 2009, [http://www.nytimes.com/2009/04/02/business/global/02electric.html?\\_r=3&bl&ex=1238904000&en=e70ffe2956e3a3c3&ei=5087%0A](http://www.nytimes.com/2009/04/02/business/global/02electric.html?_r=3&bl&ex=1238904000&en=e70ffe2956e3a3c3&ei=5087%0A).

<sup>27</sup> See Claire Cain Miller, *An All-Electric Sedan, Awaiting Federal Aid*, N.Y. TIMES, Mar. 26, 2009, <http://www.nytimes.com/2009/03/27/technology/start-ups/27tesla.html?ref=start-ups> (advancing that Tesla Motors has been stalled by the credit crisis and is depending on a government loan to begin production on the vehicle).

<sup>28</sup> *Id.*

<sup>29</sup> See *id.* (reporting that the DOE awarded a \$535 million loan guarantee to Solyndra, Inc. for the expansion of production of photovoltaic systems).

<sup>30</sup> See Galbraith, *supra* note 14 (“The stimulus package, and the president’s emphasis on renewable energy, may also breathe new life into Silicon Valley, Boston and other clean-tech hubs.”).