

Content Includes:

Preqin Special Report: Cleantech Waiting for the Upturn?

February 2013

Investor Attitudes

We look at investor attitudes towards the cleantech industry and investors' preferences towards specific sectors.

Fundraising Markets

We assess historical trends and the outlook of the cleantech fundraising market across investment strategies and geographies.

Deals Activity

A round-up of private equity-backed buyout, venture capital and infrastructure cleantech deals.



Foreword

The past year has been tough for the cleantech market, with fundraising levels and deal activity notably lower in 2012 compared to 2011. This could be down to a number of reasons, including a fall in natural gas prices, policy uncertainty and a decrease in feed-in tariffs for renewable energy. Furthermore, many investors remain opportunistic towards the industry, or commit to funds that feature cleantech as part of a much wider sector focus.

Positive signs have emerged, however; many investors remain committed to the industry, with a number of fund of funds managers raising dedicated cleantech-focused vehicles. Almost half of cleantech private equity funds in market have held interim closes, opening up large sums of capital that can be invested. Furthermore, maturity among cleantech firms has encouraged larger fund managers to invest in cleantech companies across many investment stages, from venture capital and growth, through to buyout and infrastructure.

Despite this, 2013 looks set to remain challenging for cleantech fund managers seeking to raise new funds, with a large number of dedicated cleantech vehicles on the road competing for LP capital, not only with each other, but with more diversified vehicles that set aside smaller allocations to cleantech.

Preqin Special Report: Cleantech, February 2013 provides an overview of the private equity cleantech market, looking at trends and developments in fundraising, deal activity and investor attitudes towards the sector. The report draws exclusively from many of Preqin's online products and services, which provide over 10,000 industry professionals with data on all aspects of alternative assets, including fund managers, fundraising, investors, deals, performance, service providers and much more.

We hope you find this report useful, and welcome any feedback you may have. For more information, please visit www.preqin.com or contact info@preqin.com

Key Findings

- 22% of cleantech investors are set commit to funds in 2013, with a further 61% remaining opportunistic.
- Hydro and solar power are both sector preferences for three-quarters of LPs investing in cleantech funds.

[More investor information can be found on page 3](#)

- \$2.8bn was raised by cleantech funds that closed in 2012, compared to \$6.1bn in 2011 and \$4.9bn in 2010.
- 51 of the 103 private equity cleantech funds in market have held interim closes, raising over \$4bn in capital.

[More fundraising data can be found on pages 4-5](#)

- Solar power investments account for 24% of buyout and venture capital cleantech deals since 2008.
- Buyout deals account for 17% of cleantech investments in 2012, compared to 9% in 2009.

[More deal activity information can be found on pages 6-7](#)

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Investor Attitudes Towards Cleantech

An increase in global awareness of our environment, the need to cut pollution, and the need to preserve and find alternative energy sources, led to the growth of the private equity cleantech industry over the past 10 years. However, the past four years have seen challenging times in the sector, driven partly by the global financial situation, and partly by issues specific to cleantech. As the industry has developed, Preqin has tracked both trends and specific information on important aspects of the industry, from fund managers and investors, to funds and deals.

Preqin currently profiles over 1,200 private equity investors and over 890 infrastructure investors with an interest in investing in cleantech or current exposure to the sector. Investor profiles include detailed and up-to-date information on current fund searches and open mandates, areas of interest by location and fund type, current and target allocations, and more, allowing GPs, placement agents and other marketing professionals to profile and identify potential investors for their new funds.

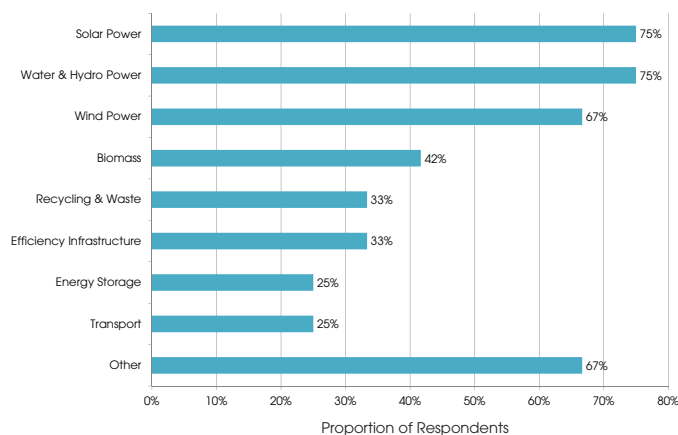
Preqin also tracks trends in cleantech investor sentiment through surveys of key institutional investors. In December 2012 Preqin's analysts interviewed 31 institutional investors in cleantech funds to analyze their attitudes towards cleantech, and their plans for the industry going forward.

Appetite for Cleantech

Just over one-third (36%) of respondents said they committed to a fund investing in cleantech over the course of 2012, and 22% of respondents said they intend to commit capital to a fund with a cleantech focus in 2013 (Fig. 1). This is a decrease compared to a similar survey conducted at the beginning of 2011, when a larger 31% of investors interviewed planned to make investments in the 12 months following the start of 2011.

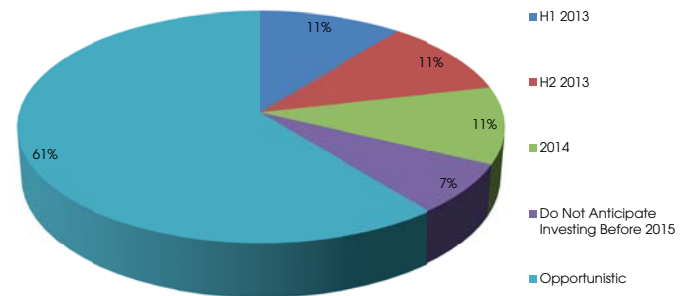
However, institutional investors typically take an opportunistic approach to investing in cleantech, with just 20% stating that they have a set allocation; this may explain why the majority of investors in the sector (61%) are uncertain about the

Fig. 2: Investors' Industry Preferences when Investing in Cleantech Funds



Source: Preqin Cleantech Investor Survey - December 2012

Fig. 1: Timeframe for Investors' Next Intended Commitments to Cleantech Funds



Source: Preqin Cleantech Investor Survey - December 2012

timeframe of their next commitment. Fund managers able to present a compelling fund offering and display a strong track record have the potential to raise capital from these investors.

Investor Preferences

Preqin asked investors whether there are any particular sectors they look to gain exposure to when investing in the cleantech space. Fig. 2 shows that solar power, and water and hydro power investments are each being targeted by 75% of respondents. A significant 67% of respondents are seeking to invest in funds focusing on the wind power industry. Sixty-seven percent of investors interviewed focus on other cleantech sectors, including geothermal, fuel cells, nuclear and carbon credit.

Types of Cleantech Investor

After public pension funds, which account for 33% of cleantech investors in funds closed in 2011-2012, fund of funds managers account for a significant 16% of known investors in funds closed in the last two years. A number of these managers have vehicles focused on clean technology, environmental services and renewable energy, including HarbourVest Partners, which is currently raising capital for its second cleantech-focused fund of funds vehicle. Other prominent investors in cleantech funds include government agencies (10%), insurance companies (8%) and banks (7%).

Source New Investors for Funds and Co-investments

Seek out the most relevant active investors with a stated interest in cleantech using Preqin's online products.

Investor profiles include current fund searches and open mandates, direct contact information and sample investments.

Private Equity: www.preqin.com/ii
 Infrastructure: www.preqin.com/infrastructure

Cleantech Fundraising Overview

Fundraising in the clean technology arena of the private equity industry had another very challenging year in 2012. However, increased awareness in the global community about clean technology, coupled with government backing for green initiatives and innovative developments in alternative fuels, continue to drive interest in the clean technology sector. One hundred and three funds targeting the sector are in market as of January 2013, and 51 of these funds have already held an interim close, showing that there is still appetite for cleantech investments.

Preqin currently tracks 236 firms with active funds that consider cleantech as a primary focus; these firms focus solely on cleantech, environmental services and renewable energy industries. In addition, 549 firms currently manage funds that include cleantech as part of a diversified industry focus. The analysis in this section relates to funds that focus solely on cleantech, and does not include funds that target the sector as part of a wider industry focus.

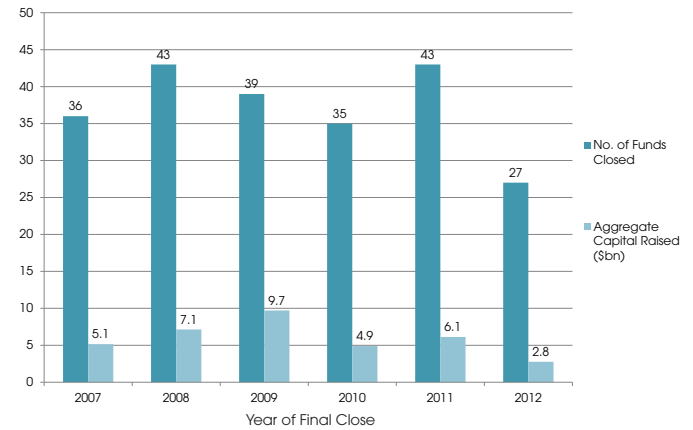
Historical Cleantech Fundraising

The amount of capital raised by cleantech funds annually reached a peak in 2009, with 39 funds securing an aggregate \$9.7bn in capital commitments; this was followed by a decline in 2010. Fig. 3 shows that 2011 saw a slight improvement, with 43 cleantech funds raising an aggregate \$6.1bn. However, this fell to 27 funds raising an aggregate \$2.8bn over the course of 2012, the lowest amount to be raised over the past six years.

Fund close sizes in 2012 were notably smaller than some of the fund closes seen in previous years. The average size of cleantech funds that closed in 2012 was \$103mn, a 27% drop compared to the 2011 figure of \$142mn, and a 59% drop from the 2009 figure of \$249mn. The largest cleantech vehicle that closed in 2012 was Braemar Energy Ventures III, a \$300mn venture capital fund with a focus on the renewable energy sector.

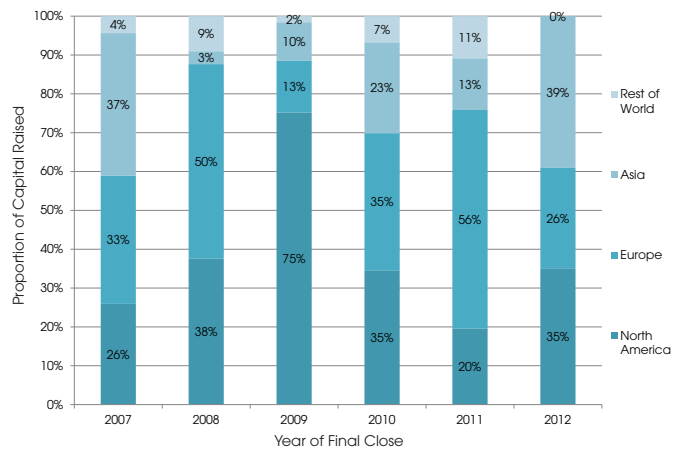
Venture capital was the most prominent fund type among cleantech funds that closed in 2012 by capital raised. Of the 27 cleantech funds that closed in 2012, 11 of these were venture capital funds, raising an aggregate \$1.3bn, accounting for 46% of the total capital raised by cleantech funds throughout the year.

Fig. 3: Annual Private Equity Cleantech Fundraising, 2007 - 2012



Source: Preqin Funds in Market Online Service

Fig. 4: Proportion of Annual Private Equity Cleantech Capital Raised by Primary Geographic Focus, 2007 - 2012



Source: Preqin Funds in Market Online Service

The second most prominent fund type was infrastructure, with 11 infrastructure funds raising an aggregate \$1.2bn in 2012.

Fig. 5: Largest Private Equity Cleantech Firms by Total Capital Raised in Last 10 Years

Firm	Location	Cleantech Funds Raised (\$mn)	Vintage of Most Recent Cleantech Fund Closed
Riverstone Holdings	US	4,485	2010
Khosla Ventures	US	2,100	2011
Climate Change Capital	UK	1,287	2007
HgCapital	UK	1,125	2010
Hudson Clean Energy Partners	US	1,024	2008
Robeco Private Equity (SAM Private Equity)	Netherlands	767	2010
RockPort Capital Partners	US	714	2008
Global Environment Fund	US	695	2010
Generation Investment Management	UK	683	2008
Impax	UK	610	2011

Source: Preqin Funds in Market Online Service

Europe-focused cleantech fundraising has fluctuated somewhat over the past six years, as shown in Fig. 4, raising an average of \$2.1bn each year from 2007 to 2012. Although Europe-focused cleantech funds closed on an aggregate \$3.4bn in 2011, or 56% of the aggregate capital raised by cleantech funds globally that year, this fell to just \$700mn in 2012, or only 26% of aggregate capital raised by cleantech funds globally.

North America-focused cleantech fundraising reached a high in 2009, raising a significant 75% of total cleantech capital secured in that year, but funds focused on the region have not matched that level since, with the amount of capital secured falling year on year. Asia-focused cleantech fundraising has remained relatively consistent since 2009, and in 2012 Asia-focused funds secured a significant 39% of the aggregate capital raised, the largest proportion of any region in the year.

Fig. 5 shows the 10 largest private equity firms by aggregate capital raised for cleantech investing over the last 10 years. It is worth noting that of these firms, only one has a fund in the market at present. Hudson Clean Energy Partners is raising Hudson Clean Energy Partners II, a growth fund with a target of \$1.5bn, which is currently the largest cleantech fund in market.

Cleantech Funds in Market

Challenging fundraising conditions in 2012 led many fund managers to make significant cuts to target fund sizes, such as Silver Lake, which lowered the target of Silver Lake Kraftwerk Fund from \$1bn to \$750mn. Nevertheless, there are still some large funds in market, as shown in Fig. 6, with two funds targeting over \$1bn each.

Despite fund managers lowering their targets, as of January 2013 private equity cleantech vehicles are targeting an aggregate \$23bn across 103 funds, almost the same amount of capital that was raised by all cleantech funds that closed over the past four years.

Infrastructure funds are targeting the most capital and also represent the largest number of cleantech funds on the road, as indicated in Fig. 7. Growth funds are targeting the second largest amount of capital, with an aggregate target of \$5.9bn.

By geography, North America-focused cleantech funds account for the greatest proportion of funds currently in market, with 34 funds targeting an aggregate \$9.0bn to invest in this region. Thirty-three Europe-focused cleantech funds are collectively targeting \$7.4bn, and 23 funds in market are targeting Asia-focused investment opportunities, hoping to attract a total of \$3.8bn in capital.

Outlook

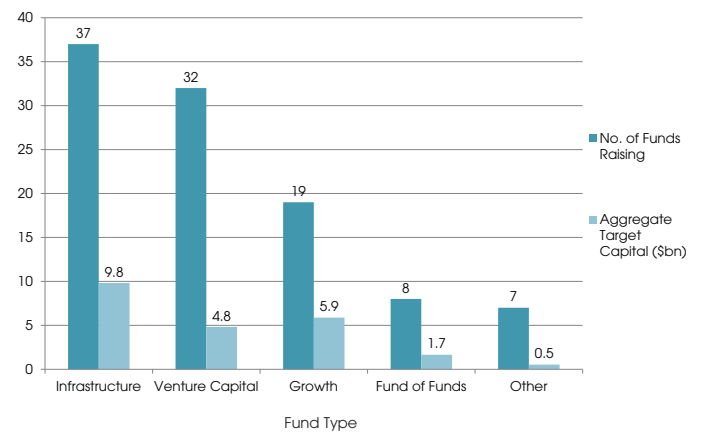
2012 witnessed a slowdown in fundraising for cleantech private equity funds, with the amount of capital raised falling by more than half compared to 2011. Over the course of 2013, fundraising for cleantech funds will remain tough, with many fund managers potentially having to revise target sizes and fundraising

Fig. 6: Largest Private Equity Cleantech Funds in Market

Fund	Type	Target Size (mn)
Hudson Clean Energy Partners II	Growth	1,500 USD
Kensington Power Income Fund	Infrastructure	1,000 CAD
Silver Lake Kraftwerk Fund	Growth	750 USD
Prime Renewables	Infrastructure	600 EUR
TPG Alternative & Renewable Technologies Partners	Growth	625 USD
REN Solar Utility Fund	Infrastructure	500 EUR
USRG Power and Biofuels Fund III	Infrastructure	500 USD
Maybank MEACP Clean Energy Fund	Infrastructure	500 USD
Energy Power Partners Fund I	Infrastructure	500 USD
Capital Dynamics Clean Energy & Infrastructure	Infrastructure	500 USD

Source: Preqin Funds in Market Online Service

Fig. 7: Breakdown of Private Equity Cleantech Funds in Market by Fund Type



Source: Preqin Funds in Market Online Service

expectations. The average size of cleantech-focused funds in market has fallen compared to the same time last year, from \$235mn in January 2012 to \$220mn in January 2013.

However, the amount of capital raised so far by cleantech funds in market is a positive indicator that there is still demand from LPs for this sector of the market; of the 103 funds seeking capital, 51 have held at least one interim close, garnering a collective \$4.0bn that they can start to deploy in investments.

Identify Potential Investment Opportunities

View in-depth profiles for all cleantech funds currently in the market, including information on investment strategy, geographic focus, target IRRs, key fundraising data, service providers used and sample investors.

Private Equity: www.preqin.com/fim
 Infrastructure: www.preqin.com/infrastructure

Cleantech Deal Activity

Preqin's coverage of private equity cleantech deals spans all investment stages and sectors, from the development of early stage green IT ideas, to growth investments in maturing solar panel manufacturers and large scale wind farm infrastructure projects. Below, we analyze recent trends in buyout and venture capital cleantech deals together, and infrastructure deals separately, to highlight specific sectors and geographies that are more prominent across different investment stages.

Buyout and Venture Capital Cleantech Deals

In 2012, there were 281 buyout- and venture capital-backed cleantech deals announced, with an aggregate value of \$4.5bn. Collectively, cleantech deal activity in 2012 represented a 21% decrease in the number and a 44% decrease in aggregate value of cleantech deals in comparison to 2011. This significant decrease, mostly a result of low levels of deal flow in the second half of 2012, can largely be put down to the drop in natural gas prices, policy uncertainty within the cleantech sector, and reduced support and feed-in tariffs for renewable energy.

Fig. 8 shows the number and aggregate value of buyout and venture capital deals in the cleantech sector from Q1 2008 to Q4 2012. Following a reasonably high sustained level of aggregate deal flow through 2008, Q1 2009 witnessed a drop to 48 cleantech deals valued at \$700mn, a 29% decrease in the volume and a 77% drop in the value in comparison to the previous quarter. From Q1 2009, the number and aggregate value of deals in the cleantech sector witnessed a choppy recovery to a peak in Q4 2010, with 85 deals valued at \$3.1bn. Subsequently, the cleantech sector saw the number of deals falling off by over a half and aggregate deal value by 90%, to 41 deals with a total deal value of \$300mn in Q4 2012.

Buyout and Venture Capital Cleantech Deals by Industry

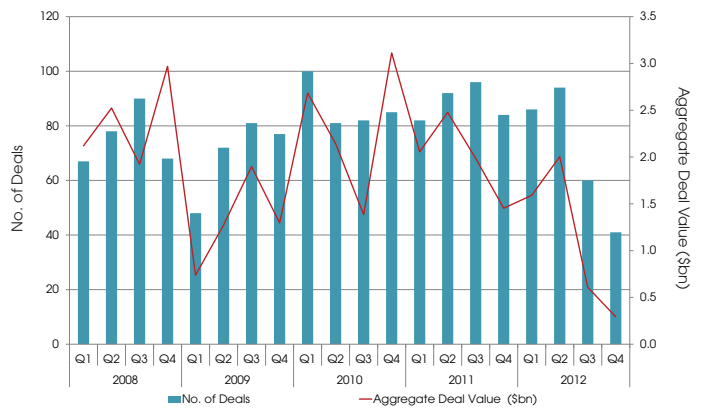
Solar energy has been the most prominent sector from 2008 to 2012, with a total of 24% of all cleantech deals taking place in this sector across this period. Interestingly, solar energy deals accounted for 28% of all cleantech deals in 2008, as shown in Fig. 9, but the proportion they account for has seen a year-on-year decrease since then, to 18% in 2012.

Transportation, and smart grid and energy were the second and third most prominent industries over the same time period. Smart grid and energy came close to overtaking solar energy as the most targeted sector in 2011, but fell back to 2008 proportions in 2012. Waste and recycling, hydro power and environmental services, although commanding relatively small proportions of total cleantech deal numbers, have seen the most growth in proportion between 2011 and 2012, with waste and recycling growing from 10% of deals in 2011 to 13% in 2012.

Buyout and Venture Capital Cleantech Deals by Stage

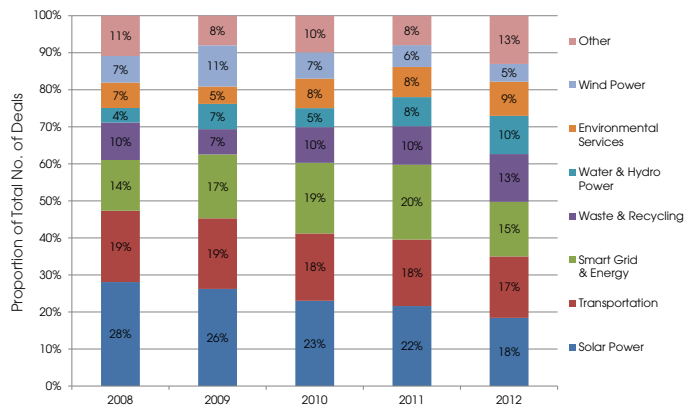
The cleantech industry over the last few years has begun to mature, leading to a notable increase in the number of buyout-backed cleantech deals, with 17% of all cleantech deals

Fig. 8: Number and Value of Buyout- and Venture Capital-Backed Cleantech Deals, Q1 2008 - Q4 2012



Source: Preqin Deals Analyst Online Service

Fig. 9: Proportion of Buyout- and Venture Capital-Backed Cleantech Deals by Industry, 2008 - 2012



Source: Preqin Deals Analyst Online Service

represented by buyout investments in 2012 in comparison to 9% in 2009.

2011 witnessed the strongest year for venture capital cleantech investment since 2008, with 283 venture capital-backed deals valued at \$4.9bn. 2012, however, recorded the lowest level of venture capital investment since 2008, with 220 venture capital-backed deals valued at \$3.1bn.

Buyout and Venture Capital Cleantech Deals by Region

North America was the most prominent region for cleantech investment in 2012, with 183 buyout- and venture capital-backed cleantech deals, and the region accounted for 64% of all cleantech deals in the last two years. However, the region experienced a sharp decrease in the value of deals taking place in 2011 and 2012, from \$5.1bn to \$2.9bn.

2010 saw an improvement in European cleantech deal activity as the region approached deal levels witnessed in 2008. This increase was short-lived, however, as the aggregate value of cleantech deals in the region in 2011 was lower than in 2010, and levels dropped further in 2012. Although the greatest proportion of capital raised for funds in 2012 was focused on Asia, the region saw a significant decline in deal value throughout the year, from \$1bn in 2011 to \$200mn in 2012.

Infrastructure Cleantech Deal Activity

Cleantech infrastructure deals have experienced relatively steady growth in recent years, reaching a peak with 99 transactions completed in 2011. Sixty-seven cleantech and renewable energy infrastructure deals were finalized in 2012, representing 32% of the 208 infrastructure deals made during the year.

Fig. 12 provides the sector breakdown of cleantech infrastructure deals completed since 2008. It demonstrates a gradual transition from wind power investments accounting for the highest proportion of deals, to solar power, with a notable growth in hydro power deals in recent years.

Europe is the dominant region for infrastructure cleantech deals, with 68% of transactions made by unlisted fund managers since 2008 involving European assets. North American assets account for 17% of total deals, Asian projects for 7% and Rest of World countries for the remaining 8%. A notable renewable energy deal completed in 2012 was the €850mn financing secured for the development of Northwind, a 216MW wind farm located off the coast of Belgium in the North Sea, by a consortium including DG Infra Yield and PMV Infrastructure Fund.

Outlook

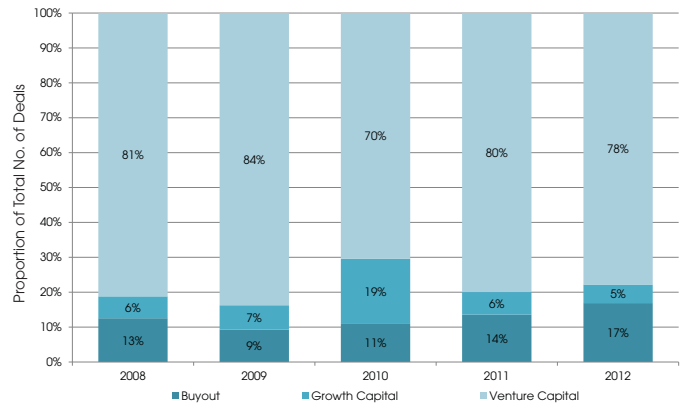
Private equity cleantech deals have dropped off considerably in 2012, due to a variety of reasons including policy uncertainty, low-cost natural gas and decreases in feed-in tariffs, especially in Europe. A trend that has been observed in the cleantech industry in recent years has been the proportional decline in growth capital and venture capital-backed deals, and an increase in the number of buyout-backed deals, which is likely to continue as the sector continues to mature. Furthermore, infrastructure deals will remain key to the cleantech industry, as indicated by the dominance these funds have in the fundraising market.

Analyze the Latest Cleantech Deals Activity

View detailed information on all cleantech deals made in recent years, filter deal flow data by region, deal type and investment stage, and see where the most investment activity is taking place: plants and production vs. cleantech start-ups; North America vs. Europe; solar power vs. hydro power. See which firms currently own these portfolio companies and assets, and how long they have held them.

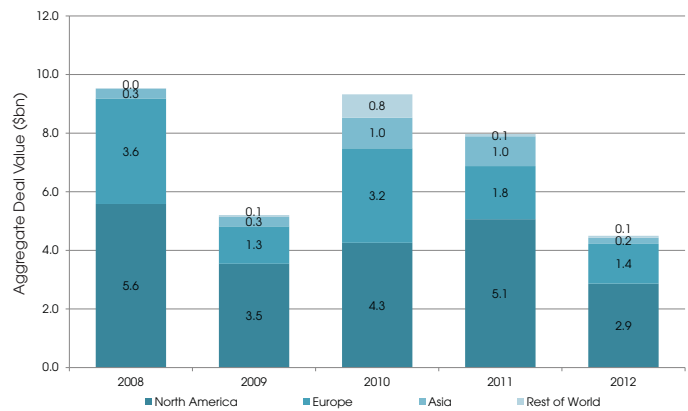
Private Equity: www.preqin.com/deals
 Infrastructure: www.preqin.com/infrastructure

Fig. 10: Proportion of Buyout- and Venture Capital-Backed Cleantech Deals by Stage, 2008 - 2012



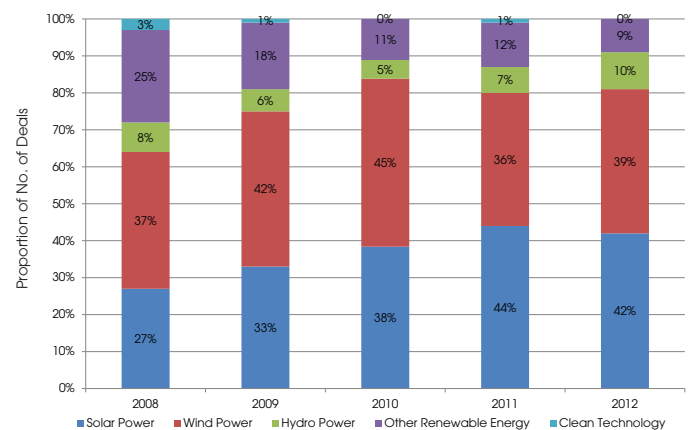
Source: Preqin Deals Analyst Online Service

Fig. 11: Aggregate Value of Buyout- and Venture Capital-Backed Cleantech Deals by Region, 2008 - 2012



Source: Preqin Deals Analyst Online Service

Fig. 12: Proportion of Infrastructure Cleantech Deals by Industry, 2008 - 2012



Source: Preqin Infrastructure Online Service

Preqin Special Report: Cleantech

February 2013

Preqin: Global Cleantech Data and Intelligence

Source new investors for funds and co-investments

Seek out the most relevant active investors with a stated interest in cleantech. Details include future investment plans, direct contact information and sample investments.

Identify potential investment opportunities

View in-depth profiles for all cleantech funds currently in the market, including information on investment strategy, geographic focus, target IRRs, key fundraising data, service providers used and sample investors.

Find active fund managers in the cleantech industry

Search for firms actively targeting cleantech investments. View information on key contacts, firm fundraising and performance history, and applied strategies of the firm when investing in portfolio companies and assets.

Analyze the latest cleantech deals activity

View detailed information on all cleantech deals made in recent years, and see where the most investment activity is taking place: plants and production vs. cleantech start-ups; North America vs. Europe; solar power vs. hydro power. See which firms currently own these portfolio companies and assets, and how long they have held them.

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New York:

One Grand Central Place
60 E 42nd Street
Suite 2544
New York
NY 10165

Tel: +1 212 350 0100
Fax: +1 440 445 9595

London:

Equitable House
47 King William Street
London
EC4R 9AF

Tel: +44 (0)20 7645 8888
Fax: +44 (0)87 0330 5892

Singapore:

One Finlayson Green
#11-02
Singapore 049246

Tel: +65 6305 2200
Fax: +65 6491 5365

Silicon Valley:

303 Twin Dolphin Drive Suite
600
Redwood City
CA 94065

Tel: +1 650 632 4345
Fax: +1 440 445 9595

Email: info@peqin.com
Web: www.preqin.com