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Clean Energy Investments Charge Forward Despite Financial Market Turmoil

***With end of cheap oil, renewables and energy efficiency attracts fast-growing interest;
New investment surpasses \$148 billion in 2007, a 60% rise from 2006,
Growth continues in 2008, UNEP study says***

Climate change worries, growing support from world governments, rising oil prices and ongoing energy security concerns combined to fuel another record-setting year of investment in the renewable energy and energy efficiency industries in 2007, according to an analysis issued Tuesday July 1 by the UN Environment Programme(UNEP).

"The clean energy industry is maturing and its backers remain bullish. These findings should empower governments-both North and South-to reach a deep and meaningful new agreement by the crucial climate convention meeting in Copenhagen in late 2009," Achim Steiner, the head of UNEP, says.

Over \$148 billion in new funding entered the sustainable energy sector globally last year, up 60% from 2006, even as a credit crunch began to roil financial markets, according to the report, "Global Trends in Sustainable Energy Investment 2008," prepared by UK-based New Energy Finance for UNEP's Paris-based Sustainable Energy Finance Initiative.

Wind energy again attracted the most investment(\$50.2 billion in 2007), but solar power grew most rapidly:attracting some \$28.6 billion of new capital and growing at an average annual rate of 254% since 2004, driven by the advent of larger project financings.

The picture since the end of 2007 has been somewhat subdued across the sector, with only mergers and acquisitions up as several substantial wind developers sold their portfolios-many realising that with the tightening up of the credit markets they could not finance the growth themselves-and the US ethanol industry undergoing restructuring.But in the second quarter of 2008 most areas of investment rebounded, even as global financial markets remained in turmoil. Sustainable energy venture capital and private equity in Q2 2008 was up 34% on Q2 2007, new build asset finance was up 8% and public market investment showing a strong recovery with the IPO of Portuguese utility EDP's renewable

energy business, EDP Renovaveis.

"Just as thousands were drawn to California and the Klondike in the late 1800s, the green energy gold rush is attracting legions of modern day prospectors in all parts of the globe," says Mr Steiner, who is also a UN Under-Secretary General.

"A century later, the key difference is that a higher proportion of those looking for riches today may find them. With world temperatures and fossil fuel prices climbing higher, it is increasingly obvious to the public and investors alike that the transition to a low-carbon society is both a global imperative and an inevitability. This is attracting an enormous inflow of capital, talent and technology. But it is only inevitable if creative market mechanisms and public policy continue to evolve to liberate rather than frustrate this clean energy dawn.

"What is unfolding is nothing less than a fundamental transformation of the world's energy infrastructure."

Most of the new money flowed into Europe, followed by the USA. However, China, India and Brazil draw growing investor interest, their share of new investment growing from 12% in 2004 to 22% in 2007, an increase in absolute terms of 14 times, from \$1.8 billion to \$26 billion.

Total 2007 sustainable energy transaction volume was \$204.9 billion, of which \$98.2 billion went into new renewable energy generation (especially wind in the US, China and Spain), \$50.1 billion went into technology development and manufacturing scale-up, and \$56.6 billion changed hands through mergers and acquisitions.

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Says Michael Liebreich, CEO of New Energy Finance Ltd, a leading provider of research and analysis on the clean energy and carbon markets and co-author of the report: "2007 was a banner year for the clean energy industry. Wind continued its strong progress, with installed capacity passing the 100 GW mark. Solar is maturing rapidly, with heavy investment to ease the silicon bottleneck and new thin-film technology beginning to reach scale. And there are plenty of other technologies lining up to be the next ones to begin a real march to scale- including biomass and geothermal. Carbon Capture and Storage (CCS) is the only sector where we did not see as much progress as we had expected, with the regulatory and funding environments for these projects remaining murky and timelines for the first commercial projects being extended."

The report offers a host of insights into sustainable energy investment worldwide:

Wind

Wind attracted more investment globally last year than any other non-fossil fuel based technology, including large hydro and nuclear power. In Europe and the US wind capacity additions in 2007 on their own accounted for 40% and 30%, respectively, of new power capacity.

Ibernova, the wind power development arm of Spanish power giant Iberdrola, raised \$7.2 billion in a landmark flotation in December 2007, the largest Spanish IPO ever and the fourth largest public deal of the year.

Global installed wind capacity surpassed 100GW in March 2008.

Ethanol

With US feedstock costs up and ethanol prices down, venture capital and private equity investment in biofuels fell by almost one-third in 2007, to \$2.1 billion. However, biofuels investment has not dried up altogether, shifting to Brazil, India and China.

Solar

Solar surged ahead in 2007, increasing its share of almost every investment category. Solar attracted by far the most venture capital and private equity investment (\$3.7 billion), although biomass and waste to energy saw the fastest (432%) growth.

During 2007 Chinese solar companies raised \$2.5 billion on the US and Europe equity capital markets.

Energy efficiency

Investment in energy efficiency technology reached a record \$1.8 billion, an increase of 78% from 2006.

North America attracted most energy efficiency investment during 2007, followed by Europe, despite the fact that its energy legislation lags behind Europe.

Buildings offer by far the greatest energy saving potential (and represent the source of 40% of CO₂ emissions). Industry and the transport efficiency follow, with the power sector (perhaps surprisingly) as the sector with the least scope for savings.

According to the International Energy Agency, each \$1 invested in energy efficiency an average avoids more than \$2 needed to create new supply.

Europe still leads

The EU remained the leading region for investment, particularly later-stage financing. Supportive policies, as well as an investor base that is comfortable

with financing renewable energy projects and more intense competition for deals, drove European asset finance to a record level of \$49.5 billion in 2007. This was 62% of asset finance worldwide.

Strong growth in USA

In the USA acceptance of sustainable energy became more widespread, extending beyond its traditional heartland of California, with Texas leading the wind energy charge. A new administration in 2009 is expected to make renewable energy and energy efficiency a political priority while recent uncertainty in the US (particularly over the possible introduction of a CO2 regulations) has put a significant number of coal-fired generation plants on hold.

The US financial sector is also gearing up for a major shift in political attitude. Citi, JPMorgan Chase and Morgan Stanley have jointly launched a set of "Carbon Principles", which will guide how they lend to and advise major power companies in the US.

The banks developed the principles to evaluate risks in financing carbon-emitting projects, given the growing uncertainty around regional and national climate change policy. They will also consider power companies' inclusion of energy efficiency and renewable resources in their portfolios as part of an "enhanced diligence process".

China

During 2007, investment in non-hydro renewables capacity in China increased by more than four times, to \$10.8 billion, and new wind capacity doubled to 6 gigawatts.

The report says the 2008 Beijing Olympic Games "sharpened the country's political resolve and strengthened programmes to promote cleaner generation and cut energy intensity."

Besides a surge of Chinese solar companies listing on US and European stock markets, public market activity is also growing at home. Notably, the Chinese wind manufacturer Goldwind raised \$243 million last year in the Shenzhen Stock Exchange's first IPO related solely to renewable energy.

Brazil

Brazil is the world's largest renewable energy market, thanks to its long established hydropower and bioethanol industries.

Sustainable energy investment in Brazil continued to be dominated by ethanol in 2007, as investor interest shifted there from the beleaguered US ethanol market. Infinity Bio-Energy (listed on London AIM) and the US agribusiness giant Cargill both made important investments in the sector.

Beyond ethanol production, investment in sugar cane cogeneration, biodiesel production and wind generation are also picking up.

India

Asset financing in India grew significantly, to \$2.5 billion, mostly for 1.7GW of new wind projects. These installations place India fourth in the world, both in terms of new capacity added in 2007 and total installed capacity.

Funds raised on Indian stock exchanges reached \$628 million in 2007, although companies increasingly looked to foreign markets for new capital, raising \$1.4 billion overseas in 2007. Public market activity was marked by a series of Foreign Currency Convertible Bonds (FCCBs) from established Indian renewable energy companies such as Suzlon(\$500 million raised) and Moser Baer(\$150 million).

The year 2007 also saw several aggressive cross-border deals involving Indian or Chinese acquirors, including Suzlon's \$1.6 billion acquisition of Repower and China National Building Material Group's purchase of German turbine blade manufacturer NOI Rotortechnik.

Africa

Africa continues to lag other regions in terms of sustainable energy investment. Asset finance, however, was up in 2007 to \$1.3 billion (five times as much as in 2006), reversing a gradual decline since 2004 and bearing witness to increasing installed renewable capacity. Investment was mainly in biofuels and geothermal. Promising large-scale solar developments were also initiated in North Africa and some signs of change in South Africa, where targets for renewable energy have been set and the country's first wind farm commissioned.

Sub-Saharan Africa, "arguably the region that has the most to gain from renewable energy," remains largely unexploited, according to the report.

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Market broadens, diversifies into emerging technologies

Investments not only grew in 2007, but broadened and diversified. Mainstream capital markets are now fully receptive to sustainable energy companies, according to the report.

2007 also saw greater activity in so-called "next generation technologies," such as cellulosic ethanol, thin-film solar technologies and energy efficiency.

Early venture capital investment surged 112% to \$2 billion in 2007, boosted by interest in emerging renewable technologies, rather than just those on the brink of commercialisation.

"The willingness to look beyond mature technologies suggests that investors are taking renewable energy and energy efficiency increasingly seriously," the report says.

Public investment

General public investments, through stock and other markets, more than doubled in 2007 to \$23.4 billion, up from \$10.5 billion in 2006.

The Wilderhill New Energy Global Innovation Index(NEX) rose 57.9% in 2007. It then fell 17.9% in first quarter of 2008 but recovered half this loss in the second quarter.

Meanwhile, assets under management in clean energy funds rose to \$35 billion in 2007.

A record 17 new clean energy public equity fund launches occurred in 2007, up from just five in 2006. Several of these were 'climate change' funds launched by mainstream investment firms including HSBC, F&C, Schroders, Deutsche Asset Management and Virgin Money.

The arrival of such heavyweights in the market is "likely to encourage the larger publicly listed companies they normally invest in to expand into sustainable energy and other low carbon sectors,"says the report.

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