



CAPITAL & ECONOMICS

The Business Case For Renewables: Obstacles And Opportunities

OVERVIEW

Of all of technology's utopian visions of the future, a world of clean, renewable power is perhaps the closest to realization. In 2015, renewable power made up 23% of global consumption, overtaking coal to become collectively the world's most installed fuel source. By 2050 renewables are expected to provide 80% of power demand in the US alone. Around half a million solar panels are installed every day.

We are in the middle of a power revolution – one likely to be further encouraged by a new global governmental consensus that the world needs to transition to a lower-carbon economy.

The drawing up of the Paris Climate Agreement (COP21) in December of 2015, and its opening for signature of April 2016, is the most important sign of how attitudes to clean energy have changed. The Climate Agreement commits every signatory state to a set renewable power target, and a set reduction of carbon emissions – heralding potentially widespread regulatory changes.

But could this, critics may worry, herald regulatory changes that could limit economic growth – or are there real business benefits to starting to transition to more renewable power?



IN DEPTH

Several factors have made renewable power possible. Since 2000, public and political awareness of pollution – and its potential consequences both for personal health and possibly for the planet – has become much more widespread, and pressure for solutions much more vocal. As Denis Waerseggers, Chairman, Aon Global Power says, “All over the world, there is a growing feeling that it makes more sense for people to power their lives with cleaner and more sustainable energy.”

The second factor is that technology is now catching up with the dreams of futurists, all as declining costs begin to make previously unviable technical solutions practical. Even with the recent low oil price environment, renewables have been seen as increasingly competitive on price, approaching a tipping point of affordability and effectiveness that is seeing their adoption increase drastically around the world, explains Waerseggers. A report from the US Department of Energy suggests that the costs of some renewables sources may have fallen by up to 94% since 2008 alone. These are game-changing numbers.

The third factor is that governments, financial institutions and businesses are now increasingly willing to put financial and organizational weight behind these solutions. No longer are renewables seen as a risky bet, but as a long-term investment – attracting interest from a broader range of investors than seen during the early stages of their development. Geopolitical concerns about energy security, particular in the form of Gulf State fossil fuels, have also contributed to making renewables more attractive options for policymakers.

According to Tom Sexton, Head of Aon’s Power Division in London, it’s thanks to this combination of factors – public awareness, more efficient technology, and government and corporate will – that the renewable revolution is taking off.

Who’s Picking Up The Bill?

There is, then, money to be made in a broad push for renewables. But that initial push will also need a great deal of funding, which could come from several fronts. There are three primary sources for funding for the renewable energy transition:

1) Governments

The role of governments has been and will continue to be pivotal in the development of renewable power. The public sector will be responsible for channelling public funding into projects through forms of funding such as subsidies for both industrial (i.e. wind or solar farms) and consumer (i.e. rooftop solar panels) renewable products, grants for researchers and institutions, and tax breaks for pliant industrial players.

As a large-scale transformation, reliant on big infrastructure projects and energy grids, policy will also seek to direct the development of renewable power in a strategic way. This could include the issuing of PPAs (power purchase agreements), contracts which license businesses to develop energy products and distribution systems, as well as tax incentives to make the switch. Government affiliated bodies will also play a key role in issuing and encouraging green bonds, of which nearly \$42 billion were issued in 2015.

But governments will need to continue the push to make sure investors do too. “Around the world investors have many options to invest in renewable energy with long-term PPAs,” says Waerseggers. “As it comes down to a right risk balance – the risk versus the reward – many investors are still waiting on the final decision on energy before making a financial commitment.” Essentially, the options to invest are out there. But government must play a role in ensuring the landscape is an attractive, low-risk one in which investors can put their capital.

2) Equity Finance

Financial institutions will also have a more important role to play in driving renewable energy. These include major development banks like the World Bank which is already involved with providing funding to a large number of renewable energy projects.

Early stage investments in renewables have largely come in the form of equity / balance sheet investments, but as profit opportunities grow, bigger private sector financial vehicles are also beginning to pull up. Lending banks are now providing debt capital to a wide spectrum of major renewable energy assets. Pension funds and mutual funds, with their much larger pools of capital, collected from broad bases of contributors, are already providing increasingly large injections into the renewables sector as momentum builds. Utility-type returns are historically stable, safe bets for these kind of funds, so as the space matures and renewables become seen as a reliable, low-risk utility on a par with coal and gas, then capital will begin to move into the sector at scale, explains Sexton.

The long-term returns of energy projects are also an attractive feature for investors. “As an asset class, infrastructure investment is growing in popularity across pension funds and insurance companies, who are looking to longer-term returns on investment. Infrastructure assets, which in many cases are contracted for a span of 30 or more years, provide predictable, stable returns,” says Paul Schultz, CEO, Aon Securities.

3) Institutional Lenders (Debt Capital)

Debt capital is the issuing of debt by an entity in exchange for an immediate injection of capital. That capital will then be paid off to the lender over a set period of time. Debt capital typically takes the form of bonds, and, as it gives the issuer quick access to a large sum of capital (and the timescale in which to generate sufficient profits to pay off that debt) they should be attractive to capital-intensive projects like renewables development.

This is indeed the case with green bonds. Green bonds are taxed-exempt bonds issued by accredited bodies for the explicit financing of “green projects” such as renewable energy. Their tax-exempt status makes them more attractive than conventional bonds, and are a good example of financial vehicles being used to drive development in the renewables sector.

It’s working. Green bonds have proved remarkably popular in recent years, with nearly \$42 billion invested in them worldwide in 2015. In 2012, that figure was just \$2.6 billion.

4) Alternative Finance

While government programs and high-value investment funds will do much of the heavy lifting in getting the space moving, there will be plenty of room too for smaller, alternative models of financing to play a part. Crowdfunding doesn’t have the sheer muscle of institutional finance, but it can react more flexibly to consumer demands, and give impetus to technologies that would otherwise go unconsidered. For instance, sites like Gridshare allow everyday, non-institutional investors to invest in renewable energy projects around the world.

With a growing number of consumers around the world keen to reduce their own carbon impact, these kinds of bottom-up funding programs are likely to continue to grow in popularity – in turn demonstrating consumer demand, and encouraging increased private sector investment.

The Renewable Energy Business Opportunity

Today, investing in cleaner power needn’t just be an exercise in corporate social responsibility – nor simply a way to pursue long-term returns in an age of low interest rates. There are other serious business reasons for private sector stakeholders to make a strong push into renewables resources. For instance:

- **Reducing exposure to energy price fluctuations.** Thanks to the fluctuations in oil price over the last few years, energy prices are one of the most significant – and least-controllable – elements of much business and economic planning. Swedish furniture firm IKEA has committed to become 100% renewable by 2020 to increase its energy independence and maintain tighter control over its profit margins – as well as in a bid to protect natural resources and reduce its environmental impact. With the rise of cheaper, more effective renewable energy solutions, self-generation of power is becoming a far more viable option.
- **A push towards renewables will create increased demand in other sectors.** Even though wind, sunlight and tidal patterns may offer bottomless sources of energy, there is still a need to convert that energy into electricity, and to deliver that electricity when and where it’s needed. Meanwhile, developing improved technologies to make renewable power generation and storage more effective is already proving a significant growth market – as Tesla’s

\$1.3 billion new gigafactory for building batteries for electricity storage makes clear. Better renewable services could also provide a boost for things like electric cars, or even more exotic projects like the Hyperloop, a vacuum tube transit service that will likely rely heavily on solar power.

- **New entrants are disrupting the energy sector, in turn creating new investment opportunities.** As methods of extracting power from renewable sources, and the infrastructure needed to deploy that power, become more sophisticated, tech players will increasingly become big players in energy too. This trend is likely to increase as more and more cutting-edge power generation technologies enter the picture, and in turn inspire new technological developments such as photovoltaic paint or nano-engineered solar panels. Waerseggers highlights the nanotech industry as a particularly important one in the development of the renewables space. “Nanofluids that capture more heat in geothermal plants, spherical core-shell nanoparticles that improve efficiency of hydrogen storage, nano-cells that capture energy out of paint, glass, concrete and brick walls, and superconducting cables based on carbon nanotubes” are among the emerging potential applications of nanotech in the energy space, he says.
- **Change is coming whether the private sector gets on board or not.** The UK is looking to phase out coal entirely by 2025, and is on track to hit that target ahead of time. New Zealand is set to close its final coal power station in 2018. If power-generating companies are to remain viable as businesses, they will need to adapt to become producers of cleaner energy. Examples of fossil-power plants that are already adapting to new realities include Drax power station in the UK, which is converting its coal burners to biofuel. Government incentives to transition to renewables are likely to play a major part in post-COP21 regulatory changes – as are taxes on industries perceived as more polluting. Leaving the transition too late could leave organizations open to penalties.

There are also a number of second-order benefits associated with renewable power, which will create value without being directly connected to energy generation. A spread of domestic solar power and robust commercial battery systems could make urban power infrastructure much more resilient to power outages and natural disasters, offering potentially massive savings to city and national governments.

Businesses across verticals should be eager to exploit these economic opportunities – and indeed they are, if the Tech Amici Brief, demanding the prompt implementation of the White House’s Clean Power Plan (CPP), and whose signatories included some of the US’ biggest consumer and technology brands, is anything to go by.

The REN21 group, comprised of policymakers, NGOs, and academic and industry figures has also emerged as a leading voice in multinational, cross-vertical collaboration on confronting renewable energy issues. Any real solutions will need to embrace all stakeholders.

“There are many examples where it’s good business sense for non-traditional power companies to invest in these new sectors, not only because they believe they can make good returns, but also because they can be good corporate citizens, which eventually falls back to the climate change conventions at Paris,” says Sexton.

The Road Ahead

Many optimistic futurist dreams do not come to pass. The renewable future already has: There is a broad, multilateral consensus on its value, tech sector commitment to green innovation, and private finance increasingly comfortable with investing in what was once seen as a high risk area.

Difficulties of course remain. China and Germany are amongst the world’s most prolific installers of renewable capacity, but supply is beginning to overtake the ability of existing electricity grids to deliver, which is causing inefficiencies. Huge infrastructure investment is needed if these pushes are to be successful.

The momentum is there. The virtuous cycle of renewable power generation is turning, and if governments, companies and individuals can keep to the track, then the opportunities for business and for the world at large should be enormous.

TALKING POINTS



"Sourcing renewable electricity enables us to diversify our energy supply, reduce costs, provide a hedge against rising traditional energy costs and helps contribute to cleaner, healthier communities." – Curtis Ravenel, Global Head of Sustainable Business and Finance, Bloomberg



"We see this as the clean little secret of a sustainable business: Preserving the climate can also save you money." – Kevin Rabinovitch, Global Director of Sustainability, Mars, Inc.



"Mainstream corporate reporting on climate change will play a crucial role in the transition started by the Paris Agreement. Consistent, clear and comparable information on corporate climate change performance will become a key part of the dataset that markets will operate on, alongside financial performance." – Jane Stevensen, Leader, Task Force on Climate-Related Financial Disclosures, Climate Disclosures Standards Board



"Emissions will only head downwards towards zero from now on, and so businesses and investors should invest accordingly. It is likely to prompt more and more businesses to look at how they themselves can aim for net zero emissions, further driving the pace and scale of change." – Simon Retallack, Director, Latin America, The Carbon Trust

FURTHER READING

- Renewable Energy Capacity Overtakes Coal – BBC News, October 25, 2016
- A China Bothered By Pollution Grabs Green Bond Lead – Bloomberg, November 2, 2016
- Elon Musk Reveals Solar Panels Resembling Traditional Roofing Tiles – The Independent, October 29, 2016
- The Battle To Bring Offshore Wind To America – Gizmodo, November 2, 2016
- In Germany And China, Renewables Are Outgrowing Their Grids – MIT Technology Review, October 13, 2016

