

As growth in new advanced biofuels technology marches on to a breakthrough for worldwide commercialisation, currently led by Ineos Bio in the US, Enerkem in Canada, and Beta Renewables in Italy, project finance options for 'first of a kind' technologies remain scarce

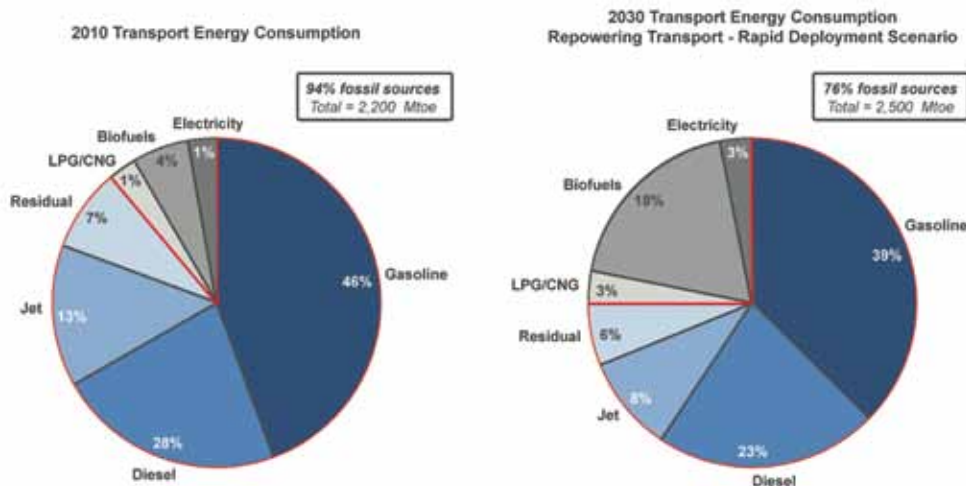
The project finance market – is it open for biofuels?

More than 60% of the 87 million barrels of oil consumed every day power the world's transportation sector, and liquid fossil fuels account for 94% of the energy supply to the sector.¹

The total amount of biofuel needed to increase world consumption of biofuels from 4% to 18% is close to 105 billion gallons, at a CAPEX cost of \$5 (€3.7) to \$10 per gallon. That equates a capital infusion in 20 years of between \$500 billion to \$1 trillion.

What is the current scenario in the drive to pull financing and investment capital into the worldwide biofuels arena? According to Biofuels Digest's annual recap of 2011, 'Biofuels DealFlow,' total private sector investments surpassed \$10 billion in 2011, of which \$3.8 billion was in new biofuels financing or in advancing early-stage companies. The US leads the world as the leader in new investment, with 22 transactions totalling \$1.104 billion. Latin America and the EU followed closely behind, and Asia Pacific and Africa also have new investments. While \$10 billion represents a positive trend for the biofuels industry, it is insufficient when considering the total amount of investment required to construct an additional

Transportation energy consumption projections 2010-2030



14% refinery capacity in biofuels gallons by 2030.²

There is also a wide gap in the amount of investment in biofuels versus the traditional oil and gas sector, which continues to be one of the most active global sectors for mergers and acquisitions in a trend that could continue during 2012 despite an uncertain economy, stated in the Ernst and Young annual review of M&A activity.

The aggregate value of 2011 oil and gas transactions was \$317 billion, 7% below the 2010 level. Nearly half the transactions took place in North America, while Europe and Asia accounted for 24%.³ This high level of activity in the conventional market is hard to compete against for developers seeking to raise equity in the venture

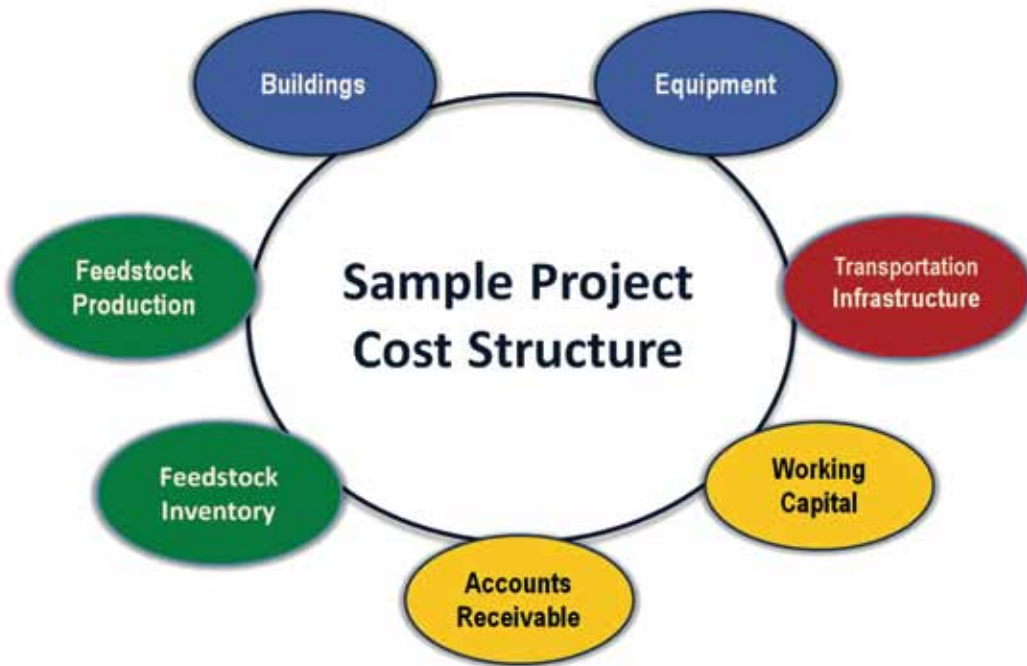
capital, hedge fund and family office marketplace.

Investment risks are closely aligned with the challenges in biofuel financing, and without proper risk mitigation strategies, create an impermeable barrier. These risks include feedstock supply risk, fragmented supply chains, product delivery risk, insufficient infrastructure and limited market access.

Another barrier to financing is the high technology risk and the large cost of a first commercial facility, and the necessity to provide technology risk mitigation strategies that are affordable and meet the needs of the investors and the financial community. Does the technology work on a much larger scale? Larger vessels and containers may not

create the same chemical reactions as in smaller pilot or demo facilities. Due to the technology risk, high capital costs and the inability to access traditional bank financing, a relatively small number of technologies and projects are funded each year.

The average time for project inception to plant start-up can last from three to five years, but the delays or inability to complete a debt financing package can add several years to the plant completion process and increase costs. If only a few companies are able to build commercial facilities each year, the probability that the industry will be able to ramp up quickly and meet the challenges of providing cost-effective renewable fuels is not possible given these constraints.



With the global economic recession, there have been large-scale reductions in banks' portfolios, particularly in Europe. European banks, which were active in renewable energy funding, and the reduced credit supply has had a considerable impact on biofuels financing. It is anticipated that European banks will shrink their portfolios by an estimated \$3.8 trillion with public plans for roughly \$2 trillion in portfolio reductions through 2013. This places pressure on the industry to find other forms of financing as a way to inject needed capital.⁴

It is also imperative that a long-term purchase contract be secured that will be contracted over the same term as the loan. This is especially important in the case of bond financing or other types of financing structures that could also be utilised. Timing for entering into a contract of this nature is also very important. Before financing can be secured, a signed contract by both parties needs to be entered into that states the price paid, and the total amount of the purchases would need to be 100% of the total production per year. The industry is witnessing a new trend as companies

start to partner with strategic investors, including oil and aviation companies as well as fuel distributors.

In addition to a long-term sales contract, it is vitally important to secure a long-term feedstock contract for the length of financing. The supply chain process begins with feedstock contracts with local producers to produce and deliver the biomass needed, and extends through final delivery to the refineries and ultimately the end user. The feedstock supply should

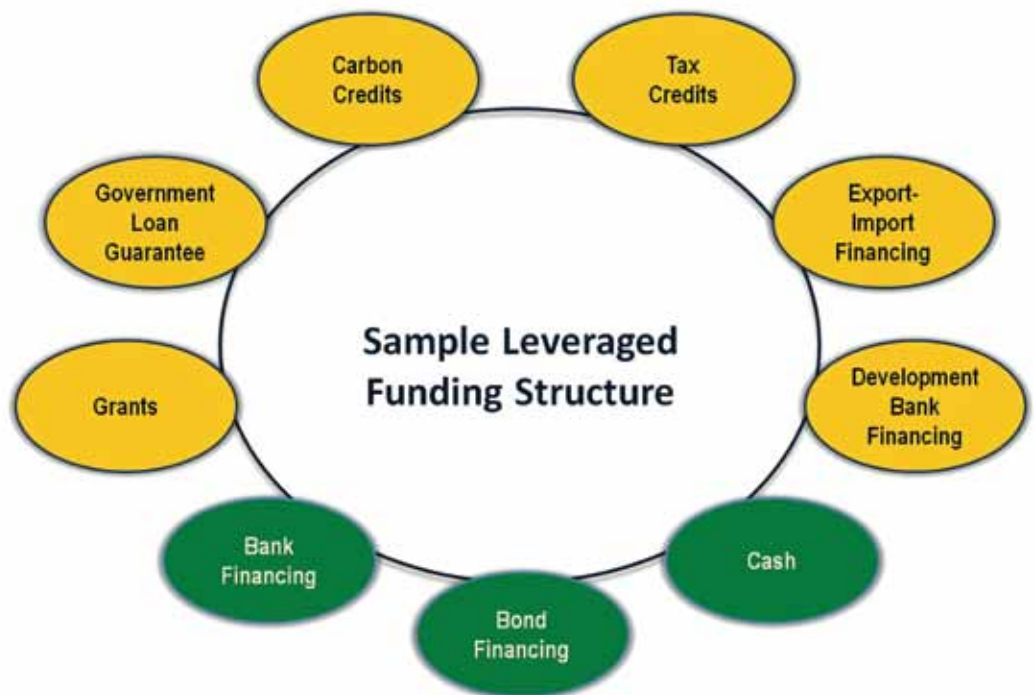
not be purchased on the open market as this will create uncertainty in prices and costs for the company. Long-term feedstock contracts are necessary to guarantee sustainable, long-term delivery of the final fuel products, and provide the financial markets this security to avoid the risk of fluctuations in the price of feedstocks over the funding period.

Financial solutions provider Westar Trade Resources has assisted companies with obtaining nearly \$700 million

in funding through the use of federal and state grants and government loan guarantees, and providing a host of other non-traditional financing options. Working with these clients on developing debt financing strategies and structures to complete the financing package has given the company a wide range of insight into the importance of creative and sustainable financing structures for the biofuels industry.

Funding for a biofuels refinery has several different types of financing needs, and a layered financial structure is often created that funds each segment in different ways, with different terms and conditions. Working capital and accounts receivable funding are usually arranged with a revolving line of credit, while buildings and equipment are funded through a longer term asset-backed loan. Feedstock production is funded by the feedstock producer, while feedstock inventory is funded through 'just-in-time' purchases. Transportation infrastructure is often funded through a public contribution, or through a public-private partnership.

There are a wide variety of benefits that governments can use to enhance the



funding structure. These can reduce or eliminate equity requirements, reduce interest rates, and leverage the private market financing options of bank and bond financing as well as cash financing.

The use of bond financing strategies is becoming prominent in the development of financing mechanisms for biofuels. The bond market has a large appetite for long-term, economically viable projects and can provide low interest, fixed rate financing mechanisms. Successful bond transactions have used federal loan guarantees to offset the technology risk, and there are other creative bond strategies that Westar is working with to provide financing for biofuels and other renewable energy projects worldwide.

As the need for R&D dollars as well as commercialisation capital intensifies, there has been a shift to 'international

hot spots' like Brazil, Canada, and Australia to obtain the necessary capital for the critical development stage.

This rapidly accelerating shift has the potential to move valuable US biofuels technology platforms to offshore markets which will be able to take advantage of the commercialisation and licensing of these technologies around the world.

Moreover, international development agencies such as the Asian Development Bank (ADB) are becoming increasingly active in creating an infrastructure for biofuels in international markets. Last year, ADB funded \$500 million for biofuels. The ADB has a strong interest in continuing support for alternative energy and is expecting to expand its portfolio in future years. Undoubtedly, worldwide development banks will play a key role in leveraging

financing and bringing to commercialisation clean technologies and biofuels.

Last but not least, the US Department of Defense is taking an active stance both in the US and around the world by promoting and investing in air and marine biofuels that can be manufactured and purchased worldwide. Recent trips to Singapore and Australia have been instrumental to highlight the commitment to operate on 50% biofuels by 2020. Not only is its interest in its own use, but military personnel are meeting with other nations and encouraging the use of these fuels by other nations as well.

Meeting the need for commercialisation financing for biofuels in the next few years will be challenging, but through the ability to access all the diverse forms of financing available, including export credit, development

banks, the bond market, and increasing profitability and market acceptance that will drive equity investments into the industry, we can meet the challenge of producing an additional 100 billion gallons and providing sustainable, reliable sources of fuels worldwide for our generation and generations to come. ●

For more information:

This article was written by Cindy Thyfault, founder and CEO, Westar Trade Resources, www.westartrade.com

1 http://www3.weforum.org/docs/WEF_MO_SustainableTransportationEcosystem_Report_2012.pdf

2 <http://www.biofuelsdigest.com/bdigest/2011/08/18/biofuels-related-investment-activity-passes-10b-for-2011/>

3 <http://www.ogj.com/articles/2012/01/ey-oil-gas-ma-volume-up-value-down-during-2011.html>

4 <http://blogs.wsj.com/economics/2012/04/18/european-banks-risk-new-global-financial-crisis-imf-warns>

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