

Mossberg's Investor Digest

From the Editor...

Thank you for your subscription to Mossberg's Investor Digest.

Headquartered in Pittsburgh, **Calgon Carbon Corporation (NYSE: CCC)**, is the world's largest producer of granular activated carbon. The Company traces its roots back to World War II, when the government was looking to find a substitute for coconut shells as the raw material used to produce granular activated carbon used in gas masks. Since that time, Calgon Carbon has been the leading innovator creating new market applications for activated carbon. The Company currently offers carbon technologies used in over 700 distinct market applications including purifying air and drinking water, foods and pharmaceuticals, as well as separating gas and removing mercury emissions from coal-powered electrical facilities. Two of relatively new opportunities involve providing solutions to remove toxic contaminants from drinking water, and proacting global marine ecosystems for invasive species. These are large opportunities that could significantly expand the Company's growth rate over the next several years.

In addition to producing activated carbon, the Company also provides services to recycle and reactivate carbon. Combined this represents approximately 80% of the company's revenue. The remaining revenue is split between other filter media types (8% of revenue), filtration equipment sales and leasing (8%), carbon cloth (1.5%), and other services and spare parts (3%).

CCC recently complete the largest acquisition in its history, adding \$100 million in revenue, strengthening its position in Europe expanding its addressable market.

Over the next three years, using 8% top line growth the model produces EBITDA growth of approximately 20% annually. Given this growth rate, we believe a 7.5x EV/EBITDA multiple is likely conservative. When applied to the EBITDA for 2020 in our back of the envelope calculation, we end up with an \$26 stock value, which represents 80% upside over the next three years.

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Every month we hear ideas suggested from our large network of professional investors. Here are a few of the ideas we heard this month, but have not reviewed in detail...

Limbach Holdings, Inc. (Nasdaq: LMB) - Limbach Holdings, Inc., with estimated revenues of approximately \$400 million in 2016, is an integrated building systems provider – managing all components of mechanical, electrical, plumbing and control systems, from system design and construction through performance and maintenance. The Company engineers, constructs and services the mechanical, plumbing, air conditioning, heating, building automation, electrical and control systems in both new and existing buildings and infrastructure. Customers include building owners in the private, not-for-profit and public/government sectors.

AMSC (NASDAQ: AMSC) - Generates the ideas, technologies and solutions that meet the world's demand for smarter, cleaner ... better energy. Through its Windtec Solutions, AMSC enables manufacturers to launch best-in-class wind turbines quickly, effectively and profitably. Through its Gridtec Solutions, AMSC provides the engineering planning services and advanced grid systems that optimize network reliability, efficiency and performance. The company's solutions are now powering gigawatts of renewable energy globally and enhancing the performance and reliability of power networks in more than a dozen countries.

DMC Global Inc. (Nasdaq: BOOM)– Based in Boulder, Colorado, DMC serves a global network of customers in the energy, infrastructure and industrials markets through two core businesses: NobelClad and Oilfield Products. The NobelClad segment is the world's largest manufacturer of explosion-welded clad metal plates, which are used to fabricate capital equipment utilized within various process industries and other industrial sectors. Oilfield Products refers to the business of DynaEnergetics, an international developer, manufacturer and marketer of advanced explosive components and systems used to perforate oil and gas wells.

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Best Idea Profile:

Calgon Carbon Corporation (NYSE: CCC)

DESCRIPTION:

Headquartered in Pittsburgh, **Calgon Carbon Corporation (NYSE: CCC)**, is the world's largest producer of granular activated carbon. The Company traces its roots back to World War II, when the government was looking to find a substitute for coconut shells as the raw material used to produce granular activated carbon used in gas masks. Since that time, Calgon Carbon has been the leading innovator creating new market applications for activated carbon. The Company currently offers carbon technologies used in over 700 distinct market applications including purifying air and drinking water, foods and pharmaceuticals, as well as separating gas and removing mercury emissions from coal-powered electrical facilities. Two of relatively new opportunities involve providing solutions to remove toxic contaminants from drinking water, and proacting global marine ecosystems for invasive species. These are large opportunities that could significantly expand the Company's growth rate over the next several years.

In addition to producing activated carbon, the Company also provides services to recycle and reactivate carbon. Combined this represents approximately 80% of the company's revenue. The remaining revenue is split between other filter media types (8% of revenue), filtration equipment sales and leasing (8%), carbon cloth (1.5%), and other services and spare parts (3%).

The Company has 1,400 full-time employees at 20 manufacturing and innovation facilities in 7 countries as well as global sales presence in 16 countries.

CCC recently complete the largest acquisition in its history, adding \$100 million in revenue, strengthening its position in Europe expanding its addressable market.

Calgon Carbon Corporation (NYSE: CCC)

Investment Data (as of 3/31/17)

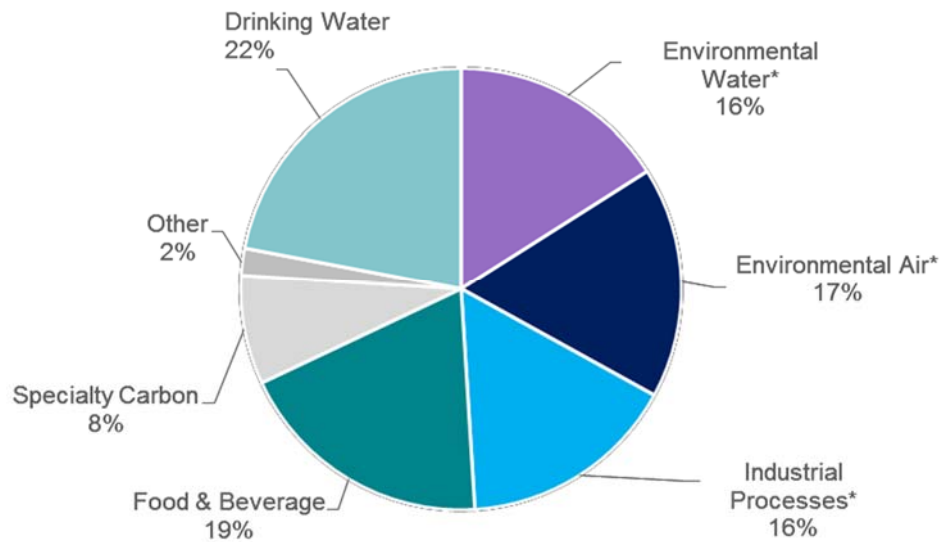
Recent Price	\$14.25
52-Week Range	\$12.70 - \$18.80
Fiscal Year End	December
Dividend	\$0.20
Yield	1.5%
Shares Outstanding	51 M
Average Trading Volume (3 mos)	240,000
Market Capitalization	\$696 M
Cash	\$38 M
Long-term Debt	\$225 M
Enterprise Value (EV)	\$959 M
2016 Revenue (proforma)	\$601 M
EV/ Revenue	1.6x
2017 EBITDA guidance	\$100M+
EV/ EBITDA	9.6x
2017 EPS consensus	\$0.66
P/E	20.8x
Book Value Per Share	\$7.46

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KEY INVESTMENT CONSIDERATIONS:

Diverse End Markets with multiple secular growth themes

Calgon Carbon products are used in a diverse set of end-markets with only one market (drinking water) comprising more than 20% of total revenue. The revenue mix is also diverse geographically, with approximately half of revenue generated in the Americas, 35% in EMEA and 16% in Asia. The diverse end-market and geographic revenue mix provides for a more stable financial performance and helps to protect against underperformance in any specific area.



Clearly the main driver for CCC's growth is the demand and regulation for clean air and clean water. In addition, there are several trends driving secular growth in each of these end markets. Two of the largest opportunities involve providing solutions to purify clean and safe drinking water, and protecting global marine ecosystems from invasive species.

Clean & safe drinking water – As the public becomes more aware of contamination of water sources globally, there is increasing demand to remove both regulated and non-regulated contaminants. Granular activated carbon is increasingly being adopted as the solution used to comply with regulations to remove DBP and other chemicals from the water supplies.

- **Removing DBPs** - Disinfection By Products (DBP) are formed from reactions between chemicals used to treat water (primarily Chlorine) and organic and inorganic matter present in the water. Several DBPs are considered carcinogenic, or otherwise harmful to humans. Regulations for removing DBPs have been in place for several years. Instead of using activated carbon to comply with these regulations many utilities found it easier and less costly to switch to chloramine from chlorine, which keeps DBPs that are currently regulated from being formed. However, chloramine still produces DBPs which are harmful to humans. Another stage of EPA regulations is being considered to regulate the removal of these DBPs caused by chloramine. The Company estimates that if the nine largest water systems switched to from chloramines to activated carbon, it would take 330 million pounds of activated carbon to initially fill the systems, which is two times the current market for activated carbon. After the initial fill, usage for reactivated carbon would be 55 million pounds per year. Three of the largest nine chloramine utilities are currently running pilot tests with activated carbon.

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Clean & safe drinking water(continued)

- **Removing PFCs** - After decades of use, perfluorinated compounds (PFCs), such as Teflon or Scotchgard, have made their way into the water supply. PFCs have been linked to several health risks including cancer, hormone disruption, liver toxicity, immune system, and reduced birth weight. So far, 94 drinking water systems have been identified with PFC contaminants affecting 6.5 million Americans across 28 states. Many other water systems have not yet been tested. In May of 2016, the EPA established a Health Advisory Exposure Limit of 70 ppt and certain states are evaluating adoption of lower limits. In 2016, CCC was awarded 20 new projects to remove PFCs and there are nearly 50 additional project opportunities under review. CCC's solution is attractive to utilities because it provides an integrated solution that includes the activated carbon, filtration equipment for sale and lease, as well as reactivation services to recycle and reuse activated carbon.
- **Removing TCPs** – Trichloropropane (TCP) is an industrial solvent that is also used as an intermediary in the creation of pesticides and other chemicals. TCP has found its way into water supply and is considered a cancer-causing toxin in the State of California. In the absence of a federal standard, there is pending regulation of TCPs in California, New Jersey and Hawaii to set maximum contaminant levels in drinking water. Earlier this week, Calgon Carbon announced the largest carbon absorption equipment project in his history with the California Water Service. The system supply contract valued at \$13.2 million will provide granular activated carbon and associated equipment systems to treat more than 30 drinking water wells contaminated by 1,2,3-Trichloropropane.
- **Removing Other contaminants** – There are several other contaminants to the water supply that could force regulated removal including carcinogenic volatile organic compounds (cVOC), endocrine-disrupting compounds (pharma /pesticides), and seasonal algal toxins

Proacting global marine ecosystems for invasive species

The addressable market to retrofit ships with ballast water treatment equipment is a sizable, estimated to be 64,000 ships with a total revenue potential of \$18 to \$20 billion. New regulations are being implemented by the IMO (International Maritime Organization) and the U.S. Coast Guard (USCG) that are intended to halt the spread of invasive species, such as Zebra Mussels.

- **IMO convention enters into force Sept 8, 2017** – The global treaty in which ships will be required to manage their ballast water to remove, render harmless, or avoid the uptake or discharge of aquatic organisms and pathogens within ballast water and sediments.
- **USCG Ballast Rule subject to compliance as of Jan. 1, 2016.** – USCG rules require ship owners to use an approved method when discharging ballast water. The enforcement of these rules has been delayed, but may move to enforcement and result in civil penalties during 2017, which could drive growth later in the year.
- **After delays, the market could heat up during 2017.** There are 60 competitors that have been type approved for use in managing ballast water. However, management expects that only about 1/3 of the competitors will be viable due to the financial burden caused by the many delays in IMO rule implementation. While it is possible there could be further delays, there is no current provision for allowing delays and the IMO rules are expected to go into force in September of 2017.

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Acquisition of Activated Carbon and Filter Aid Business from CECA

In November of 2016, Calgon Carbon completed the \$160 million acquisition of the wood-based activated carbon business from CECA, a subsidiary of the French specialty chemical producer, Arkema Group. The cash portion of \$153 million was financed through the company's \$300 million revolving credit facility.

Greater Scope and larger addressable market

- **Wood-based activated carbon** - The acquisition broadens CCC's product offering to include wood-based activated carbon. CCC has historically provided coal-based activated carbon. The acquisition expands CCC's reach into applications such as food, beverage and pharmaceutical markets, which are better suited to use wood-based product.
- **Expand into adjacent markets for other filtration media** – The acquisition brings production capabilities in diatomaceous earth and perlites, which are filtration media that can leverage CCC's existing infrastructure and distribution channels.
- **Access to broader geographic markets** – The acquisition gives CCC an immediate gateway into the activated carbon market in India, one of the Company's key new emerging geography targets.

Greater scale and efficiencies

- **Double the size of European business** – Revenue from the acquired business is expected to be approximately \$100 million during 2017. Once integrated, this will nearly double the size of CCC's existing European operations, significantly enhancing CCC's position in Europe and providing efficiencies of scale.
- **Accretive to earnings... adding \$0.08 to \$0.11 to 2017** - Post acquisition synergies, the transaction is expected to add \$100 million in revenue and \$0.08 to \$0.11 per share. Synergies are expected to come from the elimination of duplicate costs by integrating the CECA business into CCC's European operations, and debottlenecking and improving efficiencies of the acquired company's operations. Management expects to improve EBITDA of the acquired business by 40% or more by 2019. The combined European business units now operates under the name Chemviron.

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Valuation

	2017	2018	2019	2020
Revenue	650	702	758	819
Growth Rate	8%	8%	8%	8%
EBITDA Margin	15.0%	16.5%	18.0%	19.5%
EBITDA	97	116	136	160
CAPEX	75	25	30	35
Dividend	10	10	10	10
Change in Cash	12	81	96	115
Cash	38	38	38	117
Debt	213	132	35	0
EBITDA Multiple				7.5
Enterprise Value				1,197
Market Cap				1,315
Shares Outstanding				51
Valuation				\$25.78

In our back of the envelop calculation above, we make the following assumptions for growth and improvement in profitability:

- **Revenue Growth** – We assume a growth rate of approximately 8% per year for the next three years. The rate reflects the growth multiple secular growth opportunities described in the body of this report, along with growth of the acquired business.
- **EBITDA Margin** – We believe gross margin will increase 150 basis points per year. This is consistent with reaching management's targeted 20% EBITDA Margin rate. Improvements are expected to be garnered from acquisition synergies, efficiency improvement efforts, as well as operating leverage. We used EBITDA as a proxy for operating cash flow in our calculation.
- **CAPEX** – This is consistent with management's stated guidance. In addition we add \$5 million per year in CAPEX growth in 2019 and 2020.
- **Cash Flow** – We assume excess cash generation will be used to pay down debt

Over the next three years, using 8% top line growth the model produces EBITDA growth of approximately 20% annually. Given this growth rate, we believe a 7.5x EV/ EBITDA multiple is likely conservative. When applied to the EBITDA for 2020 in our calculation, we end up with an \$26 stock value, which represents 80% upside over the next three years.

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Mossberg's Investor Digest Idea Performance

The table below shows the relative change in the value of the ideas published since September 2015 and the Russell 2000. **Performance data quoted represents past performance and does not guarantee future results.** Current performance of ideas may be lower or higher than the performance quoted.

Company	Pub. Date	Original Price	Recent Price	Change	Russell 2000 Change Since Pub.	Relative Perf. vs. Russell 2000	
Calloway Golf Company (NYSE: ELY).	30-Sep-15	\$8.39	\$11.06	31.8%	25.6%	6.2%	
New Gold (NYSE: NGD).	31-Oct-15	\$2.47	\$2.99	21.1%	19.0%	2.1%	
Townsquare Media (NYSE: TSQ)	30-Nov-15	\$11.43	\$12.23	7.0%	15.4%	-8.4%	
Build-A-Bear Workshop (NYSE: BBW)	31-Dec-15	\$11.72	\$8.80	-24.9%	21.7%	-46.6%	
Dycom Industries, Inc (NYSE: DY)	31-Jan-16	\$62.18	\$93.02	49.6%	33.5%	16.1%	
Rackspace Hosting, Inc. (NYSE: RAX)	29-Feb-16	\$21.54	\$32.00	48.6%	33.7%	14.9%	
Kopin Corporation (Nasdaq:KOPN)	31-Mar-16	\$1.66	\$4.10	147.0%	24.1%	122.9%	
PAR Technology Group (NYSE: PAR)	30-Apr-16	\$6.39	\$7.20	12.7%	22.2%	-9.6%	
Full House Resorts Inc. (Nasdaq: FLL)	30-May-16	\$1.60	\$2.52	57.5%	20.2%	37.3%	
Control4 Corporation (Nasdaq: CTRL)	30-Jun-16	\$7.99	\$15.79	97.6%	20.0%	77.6%	
KapStone Paper and Packaging Corporation (NYSE: KS)	31-Jul-16	\$14.28	\$23.11	61.8%	13.3%	48.5%	
Ampco-Pittsburgh Corp. (NYSE: AP)	31-Aug-16	\$11.12	\$14.10	26.8%	11.5%	15.3%	
Select Comfort Corporation (Nasdaq: SCSS)	30-Sep-16	\$22.51	\$24.80	10.2%	10.4%	-0.3%	
Northwest Pipe Co. (NWPX)	31-Oct-16	\$13.16	\$15.79	20.0%	16.0%	4.0%	
Mitel Networks Corporation (Nasdaq: MITL)	30-Nov-16	\$7.25	\$6.92	-4.6%	4.5%	-9.1%	
Black Box Corporation (Nasdaq: BBOX)	31-Dec-16	\$15.25	\$8.90	-41.6%	1.9%	-43.5%	
RadNet, Inc. (Nasdaq: RDNT)	31-Jan-17	\$5.80	\$5.85	0.9%	1.5%	-0.6%	
Guidance Software, Inc. (Nasdaq: GUID)	28-Feb-17	\$6.60	\$5.90	-10.6%	-0.3%	-10.3%	
				Average	28.4%	16.3%	12.0%

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The goal of the Best Idea Profiles in this newsletter is to briefly describe the most relevant investment merits and risks of a company. It is not intended to be an exhaustive report including every detail. With limited space available, I am forced to include only those data points that I feel are most important for subscribers to know before they begin their own due diligence. Thank you for your interest in Mossberg's Investor Digest.

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