

## KEY DATA

Initiation Date: <b>04/28/2017</b>	
<b>52-Week Range(\$)</b>	0.07-0.51
<b>Shares Outstanding (mn)</b>	17.0
<b>Market Cap (\$mn)</b>	3.0
<b>3-Mo. Average Volume</b>	7,910
<b>Total Cash (\$k)</b>	7.6
<b>Total Debt (\$mn)</b>	0.0
<b>Dividend Yield (%)</b>	0.0
<b>Short % of Float</b>	N/A

## KEY FINANCIALS

	Trailing Twelve Months
Revenue(\$mn)	4.24
Net Income(\$mn)	-1.77
Enterprise Value/Revenue	0.8X
Price to Earnings	0.7X

## SHARE PRICE PERFORMANCE



## COMPANY OWNERSHIP

Shares Held By Insiders and 5% Owners	N/A
% of Float Held By Institutions	N/A
Number of Institutions Holding Shares	N/A

Source: Yahoo Finance

## Initiation Report

### Thunder Energies Corporation– OTC: TNRG Turning Science Into Commercial Products

Thunder Energies Corporation is a development stage company, previously incorporated formally as Thunder Fusion Corporation. The company's primary focus is its Division of Nuclear Equipment (DNE), which provides new technologies to detect smuggled nuclear weapons using a novel synthesis of the neutron from a hydrogen gas. The other two divisions are Combustion Equipment (DCE) and Optical Equipment (DOE), DCE is working on the novel HyperFurnace which achieves the full combustion of fossil fuels and DOE is engaged in the production and sale of 50 mm to 200 mm pairs of Galileo and Santilli telescopes, which are projected to generate millions in sales and support the company's longer term goals. The technologies of the three divisions are protected by individual patent applications fully owned without royalties by Thunder Energies Corporation.

## INVESTMENT HIGHLIGHTS

- Thunder Energy has already filed 2 grant applications with the Defense Threat Reduction Agency of the Department of Defense to develop nuclear weapon detection stations. The company has completed all the federal procurement requirements and is **expected to get a \$9 million grant once the application has been approved**
- The Santilli Telescope™ designed by Thunder Energy is **the only existing telescope which can detect anti-matter light in deep space through its special concave lens.**
- **Thunder Energies was granted a \$53,000 promissory initial funding from a New York investment banking group, the Power Up Group.** The note will be fully converted into stock on December 14, 2017. The funds will be used for the development of nuclear weapon detection stations

## COMPANY DESCRIPTION

Thunder Energies Corporation develops new technologies being brought to market by three divisions: 1) Division of Optical Instruments (DOE) ; 2) Division of Nuclear Instruments (DNE) ; and 3) Division of Fuel Combustion (DCE). Out of the three divisions, TEC-DOE has started the production and sale of pairs of Galileo and Santilli telescopes lenses with 50 mm, 70 mm, 100 mm, 150 mm and 200 mm sizes. The DCE is focused on the development of new clean fossil fuel combustion, while minimizing contaminants in the exhaust. The DNE is focused on the detection of smuggled nuclear materials using the novel synthesis of neutrons from hydrogen gas.

## NUMEROUS HIGH GROWTH INDUSTRIES

### Telescope Manufacturing Market Expanding Upward

Total sales within the telescope manufacturing industry were \$90 million in 2016 and are projected to reach \$200 million in sales by 2019, of which 80% will be to casual astronomers and 20% to amateur astronomers. 150,000 units are expected to be sold, of which 90% will be to casual astronomers and 10% will be to amateur astronomers.<sup>1</sup>

The market share of the telescope manufacturing industry has been very concentrated historically. The number of companies in the industry has declined, as companies have been looking to consolidate their operations to achieve greater economies of scale and lower their overall risk. Simultaneously, telescope manufacturers have gradually shifted their focus from production to more R&D activities, which further reduced the number of companies and employees in the industry.

Despite the concentration of market share, the following few years are set to be bright for telescope manufacturers, as they can benefit from the revitalization of the U.S. manufacturing industry. The new president's support of deep-space activities is also a positive, as it is anticipated to increase the market opportunity for telescope manufacturers.

### Radiation Detection, Monitoring and Safety Market

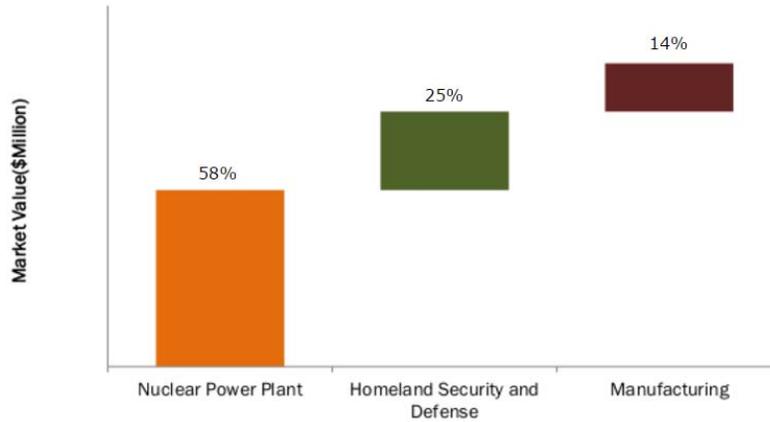
The radiation detection, monitoring and safety market size was \$1.66 Billion in 2016 and is expected to reach \$2.18 Billion by 2021, growing at 6.9% CAGR over the next five years. The North America region accounts for the largest share, roughly 45% of the market.<sup>2</sup>

The major factors leading to this growth are the increasing number of nuclear power plants across the globe, an increasing threat of nuclear terrorism, higher government security expenditures, the rising incidence of cancer and also growing safety concerns after the Fukushima disaster. The nuclear power plants segment accounts for the largest market share

<sup>1</sup>Industry Projections

<sup>2</sup>Industry Projections

(58%), followed by homeland security and defense segment (25%) and the manufacturing segment (14%). The homeland security and defense segment is the fastest-growing segment of the market, owing to aforementioned reasons.

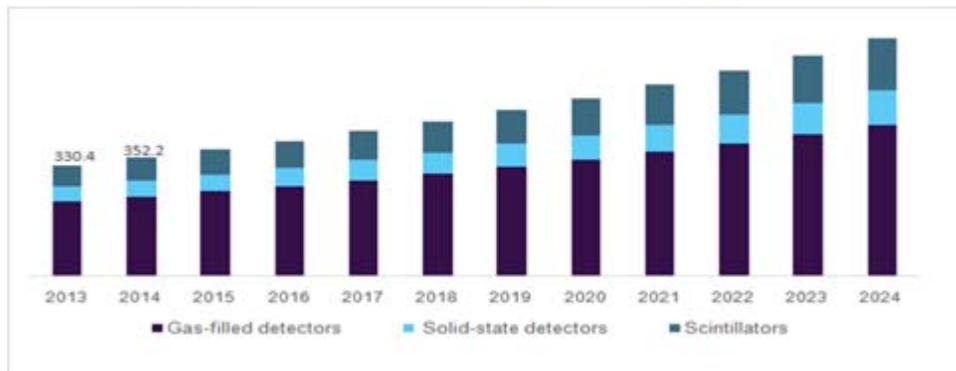


Source: Market and Market. "Radiation Detection, monitoring and safety Market Trends and Global Forecast to 2020"

The market segment by product is categorized into detection and monitoring devices and safety products. The detection and monitoring devices segment accounted for the largest market share and expected to have the highest growth rate from 2016-2021. The large share and the high growth rate of the segment comes from the increasing number of nuclear power plants and accompanying demand for radiation detection systems.

The market segment is categorized into scintillators, gas-filled detectors, and solid-state detectors. The gas-filled detector segment accounted for the largest share of the market; in 2016 also it had the highest growth rate during the trailing 5 years. The large share and high growth rate can be attributed to factors such as its high dose rate measurement and its ability to detect radiation.

U.S. radiation detection, monitoring & safety market, by detection type, 2013-2024 (USD Million)

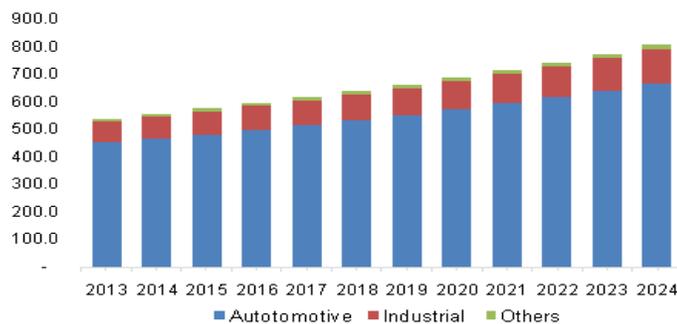


Source: Grand View Research. "Radiation Detection, Monitoring & Safety Market Size Report, 2013-2024"

## Emission Control Catalyst Market

Emission control catalysts are the catalysts which aid in reducing particulate matter, hydrocarbons, nitrogen oxides, and other emissions from the power plants, automobiles, and other sources. Precious metals such as platinum, palladium, rhodium, and vanadium are used as catalysts for coating ceramic beads in catalytic converters (used in automobiles and industrial processing units).<sup>3</sup>

The global emission control catalyst (ECC) market demand in 2016 was 2,057 kilo tons and is projected to reach 2,578 kilo tons by 2021 with a 4.0% CAGR. The market size is estimated to reach \$12 Billion by 2021, a CAGR of 10.37% for the trailing 5 years.



Source: Grand View Research. "Emission Control Catalyst Market, Industry Report, 2024"

The main drivers of the ECC market are the rapid development of the automotive sectors and the increasingly stringent emission norms. The market size of the automotive sector, especially diesel engine vehicles, is expected to growth at a CAGR of 4.3% for next 5 years to 2021, emerging market countries like China, India, Singapore, etc. contributed to most of the growth. The consistent improvement in the economic conditions in those countries has boosted the demand for automobiles.

Some drawbacks of the ECC market are the rapid growth of new energy vehicles and the limited precious metal reserves. Factors aforementioned may act as obstacles on way of the ECC market expansion.

<sup>3</sup>Modor Intelligence, Emission Control Catalysts Market, 2017

## COMPETITIVE ADVANTAGE

### Division of Optical Equipment (DOE)

50mm

70mm

100mm

150mm

200mm



Source: Thunder Energy Investor Presentation

The Santilli Telescope™ enables astronomers to detect and photograph anti-matter galaxies, anti-matter asteroids and anti-matter cosmic rays on earth or in space. It is the only telescope that can detect anti-matter lights with a unique design protected by a pending International Patent.<sup>4</sup>

To detect anti-matter lights, the Santilli telescopes should always be used in pair with conventional Galileo telescopes, which have the same diameter, curvature and focal distance of the primary lenses. Because the image of anti-matter light are always faint due to the long distance, cameras with long camera exposures, 15 seconds for example, will be used to capture the image of anti-matter lights.

#### Images of Detected Anti-matter entities



Source: Thunder Energy Investor Presentation

As suggested by peer reviewed literature, in the event we are hit by a small antimatter asteroid the size of a football, all our military, industrial and civilian communications will be disrupted for days due to the extreme excitation of our atmosphere from the radiations emitted by the matter-antimatter annihilation.<sup>5</sup> The need to develop new antimatter asteroids detection technology is precisely the reason Thunder Energies is involved in the study of the advanced detection of antimatter light.

The Santilli Telescope™ has various models already available in the market, and the cash generated

<sup>4</sup>Thunder Energies Website

<sup>5</sup>Thunder Energies Website

from the sale of telescopes will be used for the research and development of the company's Nuclear and Combustion Divisions. We expect that the Santilli Telescope will take 5% of the overall telescope market, of which 13% are serious Astronomers (20% of overall astronomers) and 2% Casual Astronomers(80% of overall astronomers). Sales are projected to be \$9 million within the next three years.

## Division of Nuclear Equipment (DNE)

Hadronic reactors built by Dr. Santilli



Source: Thunder Energies Website

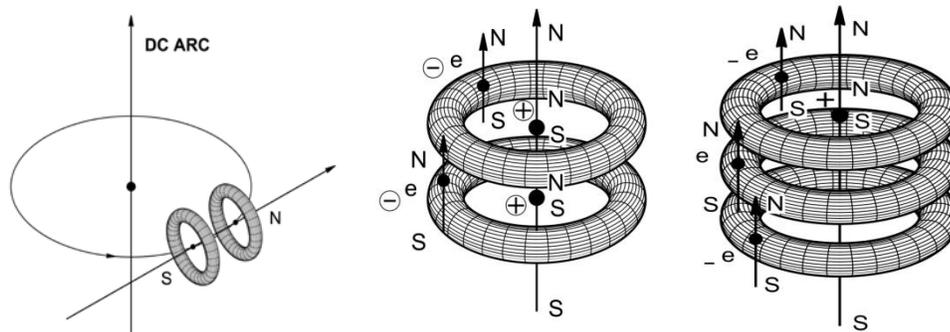
The predominant way the Domestic Nuclear Detection Office (DNDO) detects nuclear or radiological material is through the Cargo Advanced Automated Radiography System (CAARS) and Advanced Spectroscopic Portal Monitors (ASP), but neither are ideal solutions. The failure of aforementioned methods is due to the fact that when scanned via particle beams or X-rays, fissionable materials appear as ordinary metal, resulting in the inability to distinguish fissionable material when covered by or combined with conventional metals.

Dr. Santilli, the CEO of Thunder Energy, has discovered the only known means for nuclear detection. The method uses low energy neutrons, called thermal neutrons, to hit the nuclei of fissionable material, and the nuclei will break down into smaller nuclei plus additional radiations while emitting more neutrons than those absorbed. Under the presence of fissionable materials, the number of neutrons emitted per second (called neutron Counts Per Seconds - CPS) is bigger than the CPS background thus establishing the presence of fissionable material. Therefore, the scanning of containers or suitcases via a beam of thermal neutrons provides the *only known* effective means to detect smuggled fissionable material.<sup>6</sup>

Thunder Energy has already filed 2 grant applications with the Defense Threat Reduction Agency of the Department of Defense to develop nuclear weapon detection stations. The company has completed all the federal procurement requirements and is expected to get a \$ 9 million grant once the application has been approved.

## Division of Combustion Equipment (DCE)

Thunder Energy has developed a feasible new method, to boost energy output of fuels such as natural gas, petroleum, coal, gasoline, etc. without exhaust any contaminants in the atmosphere (Hyper-Furnace™).



Source: Thunder Energies Website

Thunder Energies' new clean combustion is based on the magnecular bonds depicted in the above figures between two or more atoms of fossil and other fuels with a toroid polarization of their orbits achieved via extremely high magnetic fields at atomic distances of special forms of electric arcs.<sup>7</sup>The process will reorganize the conventional molecular structure of fossil fuels into the magnecular form, which have weaker bonds. The weaker bond molecular structure allows fuller *combustion and higher energy output*.

Like the nuclear division, the combustion division is still under the research stage, and is not expected to generate revenue until late 2018. We see huge potential for the Hyper-furnace technology, especially under the environment of rapid development of the automotive sectors and the increasingly stringent emission norms. After it has been marketed, and we expected it to have 7% top-line growth rate.<sup>8</sup>

## QUARTERLY FINANCIAL RESULTS

The company is still a development stage company and hasn't yet established an ongoing source of revenues. Total operating expenses decreased in the recent quarter \$131,980 when compared to the same period in 2015, from \$238,486 to \$106,506. Among which total research and development expense decreased by approximately 44% from \$11,631 to \$6,507 due to a reduction in materials purchased. Professional fees decreased by approximately by 75% from \$166,571 to \$42,389, due to the decrease in shares issued for services.

The total weighted average number of shares increased by 556,169, when compared to the period in 2015, from 16,453,850 to 17,020,019. Total cash on hand decreased by \$5,159, when compared to the same period in 2015, from \$12,822 to \$7,663. The company is dependent on financing in order to expand its operations.

<sup>7</sup>Thunder Energies Website  
<sup>8</sup>Analyst's projection

**THUNDER ENERGIES CORPORATION**  
**Condensed Statements of Operations**  
(Unaudited)

	For the Three Months Ended		For the Nine Months Ended	
	September 30,		September 30,	
	2016	2015	2016	2015
REVENUE	\$ ---	\$ ---	\$ 12,610	\$ ---
OPERATING EXPENSES				
Research and development	6,507	11,631	31,845	49,732
Professional fees	42,389	166,571	141,643	277,731
Selling, general and administrative expenses	57,610	60,284	171,521	177,898
Total operating expenses	<u>106,506</u>	<u>238,486</u>	<u>345,009</u>	<u>505,361</u>
Net loss from operations	(106,506)	(238,486)	(332,399)	(505,361)
Other income (expense)				
Interest expense	(2,764)	(1,935)	(7,752)	(4,892)
Net loss before income taxes	<u>(109,270)</u>	<u>(240,421)</u>	<u>(340,151)</u>	<u>(510,253)</u>
Income taxes	---	---	---	---
Net loss	<u>\$ (109,270)</u>	<u>\$ (240,421)</u>	<u>\$ (340,151)</u>	<u>\$ (510,253)</u>
Basic and diluted loss per share	<u>\$ (0.01)</u>	<u>\$ (0.01)</u>	<u>\$ (0.02)</u>	<u>\$ (0.03)</u>
Weighted average number of shares outstanding	<u>17,020,019</u>	<u>16,453,850</u>	<u>16,899,251</u>	<u>16,424,557</u>

Source: Thunder Energies Corporation 10-K

## VALUATION

### Comparable Company Analysis

We conducted a comparable company analysis in order to value Thunder Energies Corporation. We choose six comparable companies that have similar production and industrial business lines and market capitalizations, from our analysis we calculated an average Enterprise Value/Revenue multiple of 0.8x, and we believe that TNRG should be traded at a similar multiple.

*(Values In Millions, metrics as of 3/27/2017)*

Company Name	Ticker	Market Cap	EV/Revenue(x)	EV/EBITDA(x)	Price/Revenue(x)
Hebron Technology Co Ltd	HEBT	56.3	1.7x	5.7x	3.3x
Inrad Optics Inc	INRD	9.0	1.1x	-32.2x	0.1x
WSI Industries Inc	WSCI	8.0	0.4x	11.6x	0.9x
Torotel Inc	TTLO	7.0	0.3x	58.8x	0.5x
Friedman Industries Inc	FRD	6.8	0.5x	-13.5x	1.9x
US Nuclear Corp	UCLE	3.1	1.9x	23.8x	0.2x
Average		15.03	1.0x	27.0x	1.1x
Thunder Energies Corporation	TNRG	5.1	4.3x	-11.73x	4
Min		3.1	0.3x	-32.2x	0.1x
Max		56	1.9x	58.8x	3.3x

Source: Analyst's Projections

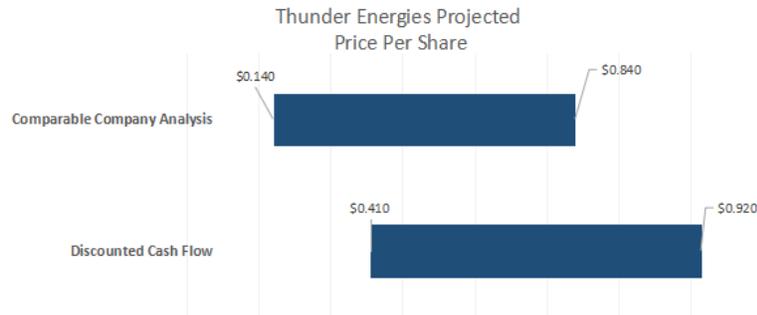
### Discounted Cash Flow Analysis

We constructed a discounted cash flow analysis using a bottom-up methodology based on the company's three company revenue streams: telescope, nuclear and combustion. The company is still a development-stage company and has not yet generated revenue so the revenue growth assumptions were made based on the overall industry growth rate and the market share Thunder Energy is expected to take, which gave the company a 7% growth rate.

We project cost and good sold and operating expense at similar level compare to its peer companies, which are 75% and 20% of the revenue accordingly. On account of the developing stage of the company, we assume a higher operating expense and cost of goods sold in near years and approach to average in later years. We assume a standard 37% tax rate, but in 2019 and 2020 we assume the company pays no taxes as a result of net operating losses. We assume continued dilution as the company will need additional capital to fund its operations.

Fiscal Year Ending	Projection Period				
	FY16E	FY17E	FY18E	FY19E	FY20E
Revenue	600,000	4,240,000	9,660,000	10,336,200	11,059,734
EBIT	(750,000)	(1,760,000)	(5,690,000)	413,448	663,584
Less: Tax	-	-	-	149,511	242,062
<b>NOPLAT</b>	(750,000)	(1,760,000)	(5,690,000)	263,937	421,522
Changes in working capital	(8,563)	(51,103)	(52,298)	(55,104)	(57,832)
Depreciation & Amortization	600	800	1,000	1,200	1,400
Capex	600	800	1,000	1,200	1,400
<b>FCFF</b>	(741,437)	(1,708,897)	(5,637,702)	319,001	479,306
Discount factor	1.02	0.95	0.89	0.84	0.79
PV of FCFE	(755,643)	(1,635,060)	(5,064,894)	269,098	379,649
	DCF	COMPS			
Multiple	0.8X	0.8X			
Sum of PV of FCFE	(6,806,849)				
<b>Terminal cash flow</b>	19,939,138			Risk Free Rate	2.30%
PV of terminal cash flow	15,793,390			Market Return	6.5%
<b>Enterprise value</b>	8,986,541	12,762,326		Beta	1.06
Less: Debt	517,000	517,000		Discount Rate	7.0%
Add: Cash	7,663	7,663		Interest Rate on Debt	3%
Equity value	8,477,204	12,252,989		Cost of equity	7%
Outstanding shares (mn)	17,398,743	17,398,743		Debt	\$517,000
Fair value per share (\$)	0.49	0.70		Equity	\$2,570,628

Fiscal Year Ending	Income Statement								
	2012A	2013A	2014A	2015A	2016E	2017E	2018E	2019E	2020E
Optical Division	-	-	-	-	600,000	2,800,000	7,600,000	8,132,000	8,701,240
Nuclear Division	-	-	-	-		1,440,000	1,920,000	2,054,400	2,198,208
Combustion Division	-	-	-	-			140,000	149,800	160,286
<b>Total Revenue</b>	-	-	-	-	<b>600,000</b>	<b>4,240,000</b>	<b>9,660,000</b>	<b>10,336,200</b>	<b>11,059,734</b>
Cost of Products	-	-	-	-	875,000	4,400,000	12,200,000	7,752,150	8,294,801
<b>Gross Profit</b>	-	-	-	-	<b>(275,000)</b>	<b>(160,000)</b>	<b>(2,540,000)</b>	<b>2,584,050</b>	<b>2,764,934</b>
<i>GPM%</i>	-	-	-	-	<i>(0)</i>	<i>(0)</i>	<i>(0)</i>	<i>0</i>	<i>0</i>
OPEX	1,265	674,315	564,325	653,375	475,000	1,600,000	3,150,000	2,170,602	2,101,349
<b>EBIT</b>	<b>(1,265)</b>	<b>(674,315)</b>	<b>(564,325)</b>	<b>(653,375)</b>	<b>(750,000)</b>	<b>(1,760,000)</b>	<b>(5,690,000)</b>	<b>413,448</b>	<b>663,584</b>
D&A	-	-	-	-	-	-	-	-	-
<b>EBITDA</b>	<b>(1,265)</b>	<b>(674,165)</b>	<b>(564,125)</b>	<b>(653,175)</b>	<b>(749,800)</b>	<b>(1,759,800)</b>	<b>(5,689,800)</b>	<b>413,648</b>	<b>663,784</b>
Total Interest & Other	-	344	2,804	7,111	9,363	9,363	9,363	9,363	9,363
<b>Pre-Tax Income</b>	<b>(1,265)</b>	<b>(674,659)</b>	<b>(567,129)</b>	<b>(660,486)</b>	<b>(759,363)</b>	<b>(1,769,363)</b>	<b>(5,699,363)</b>	<b>404,085</b>	<b>654,221</b>
Taxes	-	-	-	-	-	-	-	-	-
<b>Net Income</b>	<b>(1,265)</b>	<b>(674,659)</b>	<b>(567,129)</b>	<b>(660,486)</b>	<b>(759,363)</b>	<b>(1,769,363)</b>	<b>(5,699,363)</b>	<b>404,085</b>	<b>654,221</b>
EPS	0.00	-0.04	-0.04	-0.04	0.00	0.00	0.00	0.00	0.00
Shares Outstanding	15,000,000	15,893,082	16,066,425	16,469,942	20,000,000	22,000,000	24,000,000	26,000,000	28,000,000



In order to value Thunder Energies we used a blended valuation consisting of a discounted cash flow and comparable company analysis. Given the subjectivity at the discounted cash flow analysis we gave 75% weight to comparable company analysis and 25% to discounted cash flow analysis. Based on the two valuation metrics we believe shares of Thunder Energies could reach \$0.54.

Method	Weight	Price	Weighted Price
Discounted Cash Flow	75%	\$0.49	\$0.37
Comparable Company Analysis	25%	\$0.70	\$0.18
<b>Price Target</b>			<b>\$0.54</b>

Source: Research Analyst Analysis

## DISCLAIMER & DISCLOSURES

This report has been prepared by JGR Capital Partners, LLC and constitutes company-sponsored research. This report is based on sources JGR Capital Partners, LLC considers reliable, including the subject of the report, but not any material non-public information. JGR Capital Partners, LLC does not represent that this report is accurate or complete, and it should not be relied on as such. All information contained herein is subject to change without notice. JGR Capital Partners, LLC has engaged Small Cap Digital to disseminate this report as part of JGR Capital Partners, LLC's distribution strategy.

This report is not disseminated in connection with any distribution of securities and is not an offer to sell or the solicitation of an offer to buy any security in any jurisdiction where such an offer or solicitation would be illegal. It does not constitute a personal recommendation or take into account the particular investment objectives, financial situations, or needs of individual persons. Recipients should consider whether any information in this report is suitable for their particular circumstances and, if appropriate, seek professional advice, including tax advice. Statements included in this report may constitute forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Such statements involve a number of risks and uncertainties such as competitive factors, technological development, market demand and the company's ability to obtain new contracts and accurately estimate net revenues due to variability in size, scope and duration of projects, and internal issues.

JGR Capital Partners, LLC has been compensated for the preparation of this report by Thunder Energies Corporation via \$2,000 in cash payments for a 4-months term and 10,000 shares of restricted stock, this payments was meant to subsidize the research cost of preparing this initiation report. Small Cap Digital was not compensated by the subject company for this report. JGR Capital Partners, LLC and/or its affiliates may have or acquire a long/short position with respect to the publicly traded shares of the subject company covered in this report. JGR Capital Partners, LLC is not a broker-dealer and does not generate any investment banking or commission-based revenue with respect to the securities of the company described herein. Our professionals may provide oral or written market commentary that reflects opinions that are contrary to the opinions expressed in this report. The price and value of the shares referenced in this report may fluctuate. Past performance is not a guide to future performance, future returns are not guaranteed, and a loss of original capital may occur. Certain transactions, including those involving futures, options, and other derivatives, give rise to substantial risk and are not suitable for all investors.

Our report is disseminated primarily electronically, and, in some cases, in printed form. Electronic reports are simultaneously available to all recipients in any form. Copyright 2016-2017 Small Cap Digital. No part of this material may be (i) copied, photocopied or duplicated in any form by any means or (ii) redistributed without the prior written consent of JGR Capital Partners, LLC.