



2020 NORTH SKY CAPITAL

# IMPACT REPORT

North Sky  
CAPITAL





At North Sky, we seek to create positive social and environmental impact while generating strong financial returns. We are dedicated to bringing impact investors and innovation together through transformative investment funds. We currently invest across two strategies: impact private equity (secondaries) and sustainable infrastructure (directs).

North Sky was founded as a private equity firm in 2000. Since 2003, we have been playing an innovative and leadership role in the impact investment marketplace. We work arm-in-arm with our clients to identify and invest in companies, private equity funds and infrastructure projects that make the world a better place.

In 2005, we launched the first impact fund of funds in North America and began investing that fund in 2006. That fund significantly accelerated the adoption of life-changing technology like electric vehicles (Tesla!), solar power, LED lighting, energy storage, cost-effective water desalination, energy-efficient wastewater treatment and indoor agriculture, among many others. When the Great Recession set in, we began investing in clean energy infrastructure projects while also seeking to create attractive investment returns and high-paying construction, operations and maintenance jobs for hard-working Americans and Canadians. That fund created more than 1.2 million high quality job hours and approximately 1 GW of renewable energy production capability. In 2013, we used our position in the impact investment ecosystem to successfully launch the first impact secondaries fund in the world. To date, we have managed over \$1 billion across our impact private equity and sustainable infrastructure strategies.

Coincident with this 2020 Impact Report, we are midway through investing our third impact secondaries fund and are making the first sustainable infrastructure investments within Opportunity Zones throughout the USA. We continue to evolve and innovate too. Our Opportunity Zone strategy is designed to (1) earn an attractive investment return, (2) move our country's energy, waste and water infrastructure toward a more sustainable future and (3) boost economic development and job creation in low income areas. You can learn more about Opportunity Zones and our strategy in the Impact Spotlight on page 12.

After two decades of operations, the knowledge and capabilities of our investment team are stronger than ever, as is our desire to keep innovating. Great opportunity lies ahead. These are exciting times to be an impact investor, and we hope you will join us in building a cleaner, brighter tomorrow.

#### NORTH SKY IMPACT FUND TIMELINE:

<b>2006</b> First impact fund of funds – first in North America	<b>2008</b> Second impact fund of funds	<b>2010</b> First sustainable infrastructure fund	<b>2013</b> First impact secondaries fund – first of its kind worldwide	<b>2015</b> Second sustainable infrastructure fund	<b>2016</b> Second impact secondaries fund	<b>2018</b> Third impact secondaries fund	<b>2019</b> Developed a diversified Opportunity Zone strategy for sustainable infrastructure
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# ESG at North Sky Capital

As impact investors, we are committed to incorporating environmental, social and governance (“ESG”) criteria throughout our investment processes. We focus on market-rate investments and believe our commitment to incorporating ESG factors can positively

affect the performance of our investments. For each investment, we evaluate its alignment with firm-wide and strategy-specific ESG factors. Below is an overview of some of the factors we include:

## ENVIRONMENTAL CONCERNS

The vast majority of our investments seek to promote environmental sustainability. Many investments directly reduce harmful emissions, pollution and raw material usage (including water) or increase the use of renewable or recyclable resources. Where applicable, we encourage our investment partners to adopt sustainable practices.

## SOCIAL CONCERNS

Other investments seek to directly benefit society, often by improving health, wellness or access to resources such as food, housing, healthcare, transportation, education and good paying jobs. Our investment process screens for practices that we believe are detrimental to societal well-being. We adhere to labor laws (minimum wage requirements, non-discriminatory hiring practices), maintain basic human rights standards (no child labor, operations in conflict-free zones) and promote diverse, healthy and safe working conditions. We expect our investment partners adhere to the same high standards and advocate that they do so if needed.

## GOVERNANCE CONCERNS

Through our diligence and capital investment efforts, we seek to highlight the importance of a corporate governance framework that promotes transparent and efficient practices. Proper compliance with

applicable laws (particularly related to anti-bribery, political contributions and remuneration), transparent and accurate disclosure of corporate matters and board member accountability are three central tenets.

We are accountable to our investors through robust quarterly reporting, regular dialogue and public impact reports, market commentaries and other publications. When possible, we measure and report on material ESG metrics and impact outcomes for our investments. We continuously evaluate our ESG criteria, controls and reporting parameters to ensure they are current, relevant and state of the art. Our impact reporting continues to evolve as new resources become available that aid in defining and quantifying the positive environmental and social impact from this investment.

North Sky strives to lead by example with our ESG practices and impact investing programs. We are active participants in ESG and impact-focused organizations, including the Intentional Endowments Network (founding member), Principles for Responsible Investment (early signatory), The Forum for Sustainable and Responsible Investment (member) Confluence Philanthropy (member) and Impact Capital Forum (member). North Sky Capital has also been consistently selected by ImpactAssets as a manager within their annual IA 50 database since 2017.



# SUSTAINABLE DEVELOPMENT GOALS

At North Sky, we are committed to making investments that align with the United Nations Sustainable Development Goals (“SDGs”), which now offer our industry a common language for talking about our impact. Our investments are typically diversified across a multitude of industries such as renewable energy, energy storage, transportation, water, sustainable agriculture and healthy living. We

are pleased to expand our reporting capacity to now include information on how our portfolios align with the SDGs. We have mapped each company within our Clean Growth funds to the SDGs, aligning each with up to three of the most relevant goals. Below is a heat map demonstrating how companies featured in this report map to the SDGs.



Size is based on number of portfolio companies mapped to a given SDG.

More information on the targets and indicators outlined for each of the SDGs is available on their website: [www.sustainabledevelopment.un.org](http://www.sustainabledevelopment.un.org)



# North Sky Capital Impacts



## Sustainable Food & Agriculture

SDG 2 (“Zero Hunger”) aims to “end hunger, achieve food security and improved nutrition, and promote sustainable agriculture.”<sup>1</sup>

According to the United Nations, an estimated 821 million people were undernourished in 2017 and 770 million faced severe food insecurity worldwide.<sup>2</sup> Once considered problems solely of the developing world, hunger, food insecurity, poor nutrition and unsustainable agricultural practices have been increasingly of concern here at home in the United States as well. According to the USDA, 11.1% of all US households were food insecure at some point in 2018

and 5.6 million households were experienced severe insecurity.<sup>3</sup> In addition, according to the Centers for Disease Control and Prevention, “most Americans do not have a healthy diet” with fewer than 1 in 10 Americans eating enough fruits and vegetables and 9 in 10 consuming too much sodium, contributing to heightened rates of obesity, heart disease, and diabetes among other chronic illnesses.<sup>4</sup> Lastly, inefficient and wasteful distribution practices and consumption patterns means 31% of US food production goes to waste, making it the #1 material ending up in landfills in 2015.<sup>5</sup> The below companies are helping to improve the way we produce, distribute and consume food.

### BRIGHTFARMS

BrightFarms builds and operates hydroponic greenhouse farms in partnership with supermarkets, cities and vendors that drastically reduce the environmental impacts of farming. Hydroponic growing has numerous advantages over traditional farming techniques, including zero runoff (water is recirculated), seven times less water usage, ten times higher yields on average than field agriculture, year-round production and no pesticide is required because the indoor environment is controlled. All output is certified as non-GMO. Furthermore, since greenhouses are built near end-markets, produce arrives fresh with drastically lower shipping costs and spoilage.<sup>6</sup> The company was recently awarded the Innovation Award (Produce) at Walmart’s 2019

Supplier Growth Forum. BrightFarms produce reaches Walmart stores within 24 hours of harvest, providing consumers with fresher, tastier and pesticide-free food.<sup>7</sup>

BrightFarms currently operates facilities in Illinois, Ohio, Pennsylvania and recently announced a national expansion plan that will include new sustainable greenhouse farms in Massachusetts, New York and North Carolina. Each greenhouse will be 280,000 square feet and sit on 20 acres of land. The greenhouses will create over 150 full-time jobs with competitive wages and benefits. Each new greenhouse is expected to produce more than two million pounds of salad greens and herbs per year while using an estimated 80% less water, 90% less land and 95% less shipping fuel when compared to produce from West Coast farms.<sup>8</sup>

### REVOLUTION FOODS

Revolution Foods is a Certified B Corporation that provides healthy, fresh, affordable meals and snacks to schools in 25 major metro markets. Diet disorders among children and

ensuing healthcare costs are increasing the need to provide nutritious school meals. Revolution Foods currently serves more than 500,000 meals to children daily and is the only provider of healthy meals to schools with a national infrastructure. Revolution Foods provides schoolchildren with 1.2 million pounds of vegetables and 1.6 million servings of fresh fruit per week. The Company is also working with school systems to ensure continued delivery of meals to students during the COVID-19 pandemic.



*BrightFarms greenhouse - Rochelle, Illinois*



*Revolution Foods Lunch Bundle*

During the COVID-19 pandemic, Revolution Foods designed, produced and delivered 2 million federally reimbursable school and community meals per week nationwide.

## ZEVIA

Zevia is a provider of all-natural, zero calorie beverages. The company sells products across the sparkling, energy, mixer, organic tea and children's drink categories. Products are non-GMO Project Certified, vegan, kosher and gluten free and are made without artificial colors or phosphoric acid. Zevia beverages use stevia, a plant-based sweetener that has no caloric value. An additional benefit is stevia does not raise blood sugar levels. Zevia products can be found at your local

grocery store or can be delivered via one-time purchase or subscription through the Zevia website, as well as through Target, Whole Foods/Amazon and other online retailers.

Besides the health benefits of using stevia as a sweetener, stevia products enhance agricultural land utilization and water conservation. Stevia requires only 20% of the farmland needed to provide the same amount of sweetness as you would with sweeteners made from sugar cane or corn.



*Zevia natural soda*



## Agriculture Technology (AgTech)

Innovation in agricultural practices and technology is critical to achieving the ambitious goals set forth in SDG 2. AgTech is currently rerouting agricultural supply chains (e.g., reducing spoilage), improving crop efficiency (e.g., more diverse and resilient seeds), reducing environmental degradation (e.g., more sustainable fertilizers), introducing new and novel food alternatives

(e.g., Impossible Burgers), and spurring new ways to grow what we already consume (e.g., vertical farming).<sup>9</sup> In 2018, approximately 1,450 AgTech companies attracted \$16.9 billion in venture capital funding, signaling a maturation of the sector within private markets investing. Below are a few companies working to improve the agriculture industry.

### GRO INTELLIGENCE

Gro Intelligence has built the world's most extensive agricultural data platform. Gro's technology utilizes remote sensing and machine learning to provide valuable data to all participants in the ag ecosystem, including farmers, bankers, commodity traders, seed growers, fertilizer producers and others. The company provides value-added services like crop growth models for US corn, wheat and soybeans, Argentina soybeans, India wheat and Ukraine and Russia wheat, as well as moisture/drought forecasts, worldwide crop cycle updates (planting, growing, harvesting) and commodity futures data analytics and calorie production and consumption data to ensure food security for any given country.

Each day, the Gro Intelligence platform processes over 50 million unique data series and 400 trillion data points collected from a combination of satellite and ground-based measurements to provide real-time insights on key factors influencing agricultural commodities.<sup>10</sup> Shortly after the COVID-19 pandemic began, Gro began tracking and

reporting on the virus' impact on agricultural prices in China and the United States, including its impact on grains, vegetable oils, fresh produce, proteins and even ethanol derived from corn. This real-time data and analysis was used to help mitigate supply chain disruptions worldwide.<sup>11</sup>



*Gro Intelligence real-time agriculture data and analysis platform*

### OSTARA

Ostara recovers phosphorus, nitrogen and magnesium from municipal and industrial water systems and transforms those nutrients into a continuous-release, eco-friendly fertilizer under the Crystal Green® brand name. It is well documented that the release of nutrients like phosphorous and nitrogen into rivers and waterways can create aquatic "dead zones"



*Ostara Nutrient Recovery Technologies facility*

and algae blooms, overwhelming wildlife habitats and contaminating drinking water. Ostara's fertilizers have shown a positive yield response across a wide variety of crops. The Root-Activated™ release optimizes nutrient uptake, protecting local water resources while increasing yields. This is the first slow-release phosphorus proven to reduce nutrient runoff, closing the loop on an otherwise harmful cycle.

Since inception, Ostara has:<sup>12</sup>

- Installed 22 commercial installations
- Treated 46 trillion gallons of water
- Served over 13 million people worldwide

#### **PROSPERA**

Prospera is developing computer vision technologies and artificial intelligence algorithms that continuously monitor and analyze plant health, development and stress related to water, sunlight, nutrients, pests and disease. The company captures real-time data from the field and provides farmers with actionable insights to improve crop yields. Since inception, Prospera has assisted in the healthy production of over \$5 billion of produce.

In 2019, Prospera partnered with Valley Irrigation, the market leader in the center pivot irrigation equipment, to add Prospera's analytical tools to irrigation systems. With

this partnership, Prospera is developing the artificial intelligence, data science and machine-learning solutions to transform center pivot systems from simple irrigation machines into autonomous crop management tools. Crops are constantly monitored with an array of sensors from satellites, drones and soil probes and analyzed with Prospera's data analytics. This capability detects anomalies, optimizes irrigation and detects pests and disease before they are noticeable to humans. Prospera then generates actionable recommendations for farmers and/or sends instructions to the center pivot irrigation system for robotic operation and true autonomous crop management.<sup>13</sup>



*Agronomist in the field reviewing crop data using the Prospera technology*

## Prospera captures real-time data from the field and provides farmers with actionable insights to improve crop yields.





## Healthcare and Healthy Living

SDG 3 (“Good Health and Well-Being”) aims to “ensure healthy lives and promote well-being for all at all ages.”<sup>14</sup> Its objectives include reducing maternal, newborn and infant mortality rates, lowering rates of suicide and death from chronic illness (e.g., heart disease, cancer, diabetes, etc.), ending a range of epidemic diseases (e.g., AIDs, malaria, etc.), and strengthening treatment for alcohol and drug addiction, among others. In the

United States in 2017, the infant and maternal mortality rate was 5.8 per 1,000 live births, the third highest among OECD countries, trailing only Mexico and Turkey.<sup>15</sup> Likewise, in 2017, 14 out of every 100,000 Americans died from suicide, the highest rate since the Second World War.<sup>16</sup> More recently, the COVID-19 pandemic and opioid crisis have underscored the necessity of SDG 3’s goals in securing our physical and mental well-being. The below companies are helping find ways for us to live longer, healthier, happier and more productive lives.

### ENZYMEDICA

Enzymedica produces naturally sourced metabolic and digestive enzyme supplements to help in various biological processes.<sup>17</sup> Enzymedica is committed to producing clean products and its manufacturing processes are audited by NSF International, an independent testing company serving the food, water, health science, sustainability and consumer product sectors. Enzymedica was the first supplement brand certified by the Clean Label Project to be free of more than 130 contaminants. Enzymedica prides itself on its corporate sustainability with a LEED-Gold certified headquarters, 100% renewable commitment, and a variety of CSR initiatives, including supporting the work of Vitamin Angels, which has provided vitamins to 52 million mothers and children at risk of malnutrition in 66 countries worldwide.<sup>18</sup>

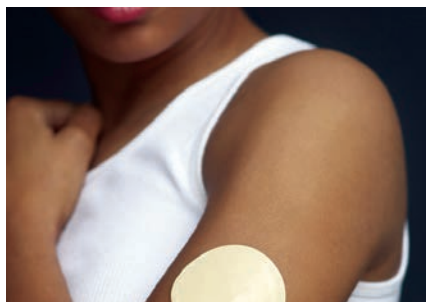


*Enzymedica naturally sourced metabolic and digestive enzyme supplements*

### Fe3 MEDICAL

Fe3 Medical developed a novel and much needed treatment for iron deficiency anemia, a condition in which blood lacks adequate healthy red blood cells. Iron deficiency affects 25 million people in the U.S.<sup>19</sup> Women are more likely than men to suffer from this deficiency, which has a variety of undesirable consequences including fatigue, poor cognition and defects in motor function. Infants and children are also at increased risk. Left untreated, iron deficiency anemia can become severe and lead to heart problems, problems during pregnancy and growth issues.<sup>20</sup>

The company’s disposable transdermal patch requires minimal preparation and is gentle on the skin. Fe3 patches deliver iron directly through a patient’s skin, bypassing the GI tract and eliminating undesirable side effects including nausea and constipation. The company’s transdermal delivery technology is currently being studied for other applications, such as delivering drugs to reduce pain or inflammation.<sup>21</sup>



*Fe3 Medical disposable transdermal iron patch*

### SONENDO

Sonendo is a developer of an acoustic and fluid-based dental technology used in root canal procedures. The process, called the GentleWave® System, is quickly becoming state of the art because it produces better outcomes in terms of saving the existing tooth with less pain and recovery time. Prior to Sonendo, a typical root canal procedure meant using a series of files to reach inside the tooth and mechanically attempting to remove the infected tissue. Traditional root canal systems are highly complex with twists and turns that make it difficult for a dentist to reach all infected areas. Any bacteria remaining after the procedure would continue to multiply, resulting in pain and typically another root canal procedure. Sonendo takes a different approach. Its technology directs sound waves and a debridement fluid throughout the entire root canal, which removes dead, damaged or infected tissue while leaving the healthy tooth and gum tissue intact. This method enhances the success of root canal procedures and greatly improves overall patient treatment experiences. Over 300,000 patients have now been treated with Sonendo’s GentleWave System<sup>22</sup> and the company is currently enjoying phenomenal growth.



*Right: Sonendo GentleWave fluid-based root canal system*



## Education

SDG 4 (“Quality Education”) aims to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.”<sup>23</sup> Education is the great equalizer. It

helps lift people out of poverty and climb socio-economic ladders. It helps businesses improve productivity through on-the-job training. It powers the American Dream. Yet even here in America there are

frustrating gaps in our education system. Increasingly, private companies and the free market are stepping in to bridge these gaps, reduce education inequality and make businesses more productive in America and around the globe. The following companies are working to improve education by enhancing teacher training, helping businesses train their employees for higher-tech jobs, increasing student engagement and providing affordable online access to education materials.

### EDUCATION.COM

Education.com provides a comprehensive suite of supplemental educational materials across a wide range of subjects to students and teachers in grades pre-K through grad five. The company has a specific emphasis in math, reading and writing with thousands of teacher-crafted learning activities that sync up with the school year. The goal is to empower teachers, students and parents so each child’s learning needs are met. Education.com empowers educators to teach kids by providing educational resources in a wide variety of mediums—worksheets, study packets, games, stories, and guided lessons—that address multiple learning styles. Resources can be accessed by both teachers and parents at home and at school to maximize time spent learning. Materials are developed using input from users to address issues of equity, diversity, inclusivity and representation.



*Education.com online guided education plans*

### ILUMNO

Illumno’s goals are to expand access to quality higher education in order to improve lives and transform societies. For more than 15 years, the company has been providing technology-enabled educational services with an emphasis on institutions in Latin America, where only 30% of age-eligible individuals attend a higher education institution and only a fraction of them complete their degree.<sup>24</sup> The company’s services fall into two major categories: online education services and growth services, such as improving admissions and retention rates. The company is a part of a global higher education network that shares the mission of providing access to quality higher education while serving more than 100 academic institutions throughout the world, including 70 public universities in the U.S.<sup>25</sup>

### Company statistics:

- 200,000+ active students in formal and informal education programs
- 25%+ annual growth rate in the number of online students attending alliance partner institutions in the last 10 years
- 90% retention rate
- 85%+ employability rate, up to three months after graduation
- 150+ management reports generated in real time

Universidad Siglo 21, an Argentina university and member of the Illumno network, has grown enrollment from under 6,000 in 2006 to over 56,000 students in 2018. María Belén Mendé Fernández, a Universidad Siglo 21 rector, noted, “Through Illumno’s network we work on different strategies that help us



*Illumno technology-enabled higher education services*

keep our students motivated and focused on what they should – studying and learning.” Universidad Siglo 21 currently has a 90% on-campus retention rate and an 84% online retention rate.<sup>26</sup>

### SINO EDUCATION

Sino Education provides post-secondary education to Chinese students. The company operates a network of vocational training/ job placement centers for adults and has the largest joint degree educational platform in China. Students can be either full time or part time while working towards their degree. Some of the programs they offer include language development (Chinese to

English/Chinese to Japanese/Chinese to Putonghua), pre-university classes, Master’s courses, and a study abroad program. Students can obtain and complete their education through Hong Kong or overseas universities. Affiliated colleges include: Commonwealth University of Australia (Federation University), Blue Mountains International Hotel Management (Torrens University Australia), and Sydney International Management Institute (International College of Management – Sydney). Overall, the purpose of the institution is to provide a one-stop shop for students interested in furthering their post-secondary education.



*Sino Education facility in Sydney, Australia*



## Water and Wastewater

SDG 6 (“Clean Water and Sanitation”) aims to “ensure availability and sustainable management of water and sanitation for all.”<sup>27</sup>

Water is essential to life. It is abundant and taken for granted in some locations while scarce and precious in others. Sustainably using and safeguarding this resource is vitally important to us all because our health, our economy and the well-being of all Earth’s intertwined ecosystems depend on it. Here in the United States, the American Society of Civil Engineers’ (“ASCE”) 2017 Infrastructure Report Card gave our drinking water

infrastructure a “D” grade, meaning it was in “poor to fair condition and mostly below standard, with many elements approaching the end of their service life.”<sup>28</sup> The ASCE estimates there are “240,000 water main breaks per year in the United States, wasting over two trillion gallons of drinking water.”<sup>29</sup> The ASCE rates American’s wastewater infrastructure slightly better, giving it a “D+” grade, but noting significant opportunities for investment in areas such as waste methane to renewable natural gas.<sup>30</sup> The below companies are working to improve the quality of the water we drink and wastewater we return to the ecosystem.

### AXINE

Axine is a developer of cost-effective modular systems for on-site treatment of toxic organic pollutants in wastewater. Axine has developed a breakthrough electrochemical oxidation technology that treats high concentrations of pollutants in a single step. The process costs less than conventional wastewater technologies and can treat 38 groups of pollutants via custom configurations ranging from one gallon per minute up to 100+ gallons per minute. Zero liquid or solid waste is generated from treatment systems.<sup>31</sup>

Axine’s systems are gaining significant traction in pharmaceutical manufacturing facilities, where contaminated wastewater used to be disposed in public water systems, a major environmental, health and safety problem. With Axine’s modular on-site systems, pharmaceutical companies eliminate the



*Axine modular water treatment systems are wirelessly connected and remotely monitored*



costs and risks of off-site incineration. For one of the company's customers, Axine created immediate operating cost savings, while eliminating 1.6 million pounds per year of off-site toxic incineration and 20,000 miles per year of off-site trucking.<sup>32</sup>

### **GRADIANT**

Gradiant offers a variety of industrial water treatment solutions, including desalination, disinfection and wastewater treatment. Their reuse and recycling systems help customers around the world avoid capital investments for water disposal and offer a lower long-term fixed price for water. Gradiant is widely recognized as a leader in the water technology industry as a nominee for Breakthrough Water Technology Company of the Year, Top 10 World Changing Idea, Technology Idol and Industrial Project of the Year.

Gradiant's systems mimic a natural rain cycle and use fewer chemicals and less energy without sacrificing performance. In fact, Gradiant can treat complex wastewater previously untreatable by other known technologies. The company recently entered the textile market, where it is helping manufacturers move toward zero liquid discharge and stopping bleach, dye and other chemicals from entering the environment. The textile industry is notorious for its water usage—roughly 150 liters of water are required to produce a day's worth of clothes for one person (e.g., two pounds of clothing).<sup>33</sup>



*Gradiant industrial water treatment facility*

### **NATURAL SYSTEMS UTILITIES**

Natural Systems Utilities (NSU) is a New Jersey-headquartered water resource management company. For more than 30 years, NSU has developed and/or operated water and wastewater infrastructure systems for public and private customers in the United States and Canada. Customers include municipalities, hospital systems, corporate campuses, entertainment venues, and real estate developments. NSU currently operates more than 240 systems, which have treated more than 39 billion gallons of wastewater and directly or indirectly reused more than 15 billion gallons.



*NSU wastewater treatment at Lutsen Resort in northern Minnesota*

**Gradient recently entered the textile market, where it is helping manufacturers move toward zero liquid discharge and stopping bleach, dye and other chemicals from entering the environment.**





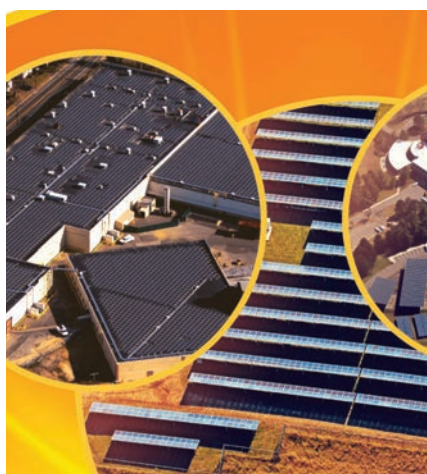
## Solar

SDG 7 (“Affordable and Clean Energy”) aims to “ensure access to affordable, reliable, sustainable and modern energy for all.”<sup>34</sup>

The world’s population is expected to grow over 25% to nearly 10 billion by 2050, doubling electricity consumption in the process.<sup>35, 36</sup> While SDG 7 does not specify a preference for any one energy generating source to meet this growing demand, solar power has enjoyed remarkable success over the past ten years.

### KDC SOLAR

KDC Solar is a New Jersey-based developer, owner and operator of commercial and industrial (“C&I”) solar projects. In December 2017, one of North Sky’s infrastructure funds entered into a joint venture with KDC to develop and construct four C&I solar projects totaling 35 MW across central NJ. Three of the four projects were placed into service in 2019 and now provide clean power to commercial customers Ardagh Glass, Centrastate Medical Center, and Six Flags Great Adventure theme park. The fourth project is expected to enter service during 2020 and has a Power Purchase Agreement (“PPA”) with a municipal customer, the Borough of Carlstadt, NJ. In addition to the environmental benefits created by providing clean power to such customers, these projects have also created more than 125,000 hours of high-quality construction jobs for the local building trades unions in NJ.



*KDC Solar commercial power generation projects*

### KINEMATICS

Kinematics is a supplier of gearboxes (called slewing gears or drives) used in utility-scale solar tracking and other mechanical systems. The company has installed nearly 1.3 million slewing drives to date to customers in 23 countries.<sup>39</sup> Kinematics’ solar products support over 15 GW of installed generating capacity and are guaranteed for accuracy and efficiency for a 30-year field life.<sup>40</sup> These slewing gears enable solar tracking systems to rotate ground-mounted solar panels to follow the sun’s path across the sky, thus greatly improving energy production levels. While typical slewing gears engage one tooth at a time, Kinematics gears engage five to thirteen teeth at a time (depending on size), improving strength, stability and life of the equipment.<sup>41</sup> This unique design allows equipment to withstand a survivability load that is four to nine times greater than loads carried by typical slewing drives.

### SOLARCENTURY

Solarcentury constructs, owns and operates residential, commercial and utility scale solar projects. The company partners with landowners, co-developers and others to



*Kinematics solar tracking systems rotate ground-mounted solar panels*

In the United States, the cost to install solar has dropped by more than 70% over the last decade, allowing the industry to expand into new markets and grow its installed base at a 73% CAGR since 2009.<sup>37</sup> Over 242,000 Americans now work in the solar industry, more than double the number that were working in the industry in 2012. We are proud to support the following companies that are a vibrant part of this \$17 billion (and growing) industry.<sup>38</sup>

identify, finance and/or construct these assets across North and South America, Europe and Africa. Since inception, Solarcentury has produced over 3.6 billion units of electricity.<sup>42</sup>

Nearly 600 million people in Africa have no access to electricity, which means they must rely on expensive and often dangerous alternatives such as kerosene lamps. These lamps emit toxic smoke and fuel costs can account for 15% of a family’s income. Additionally, the lack of electricity means children can’t study at night and the workday ends prematurely. In 2006, Solarcentury founded SolarAid, an international charity to combat these problems by providing access to solar lights in Malawi and Zambia and eradicate the kerosene lamp. Covering the \$5 cost to SolarAid for a solar light saves an African family living below the poverty line about \$170 over five years.<sup>43</sup>

Over the past twelve years, SolarAid has enabled the following impacts:<sup>44</sup>

- 12.3 million people with access to safe, clean solar light
- \$475 million saved by families
- 2.3 billion extra study hours for children
- 6 million people noticing better health



*Solarcentury installs solar systems for IKEA customers in Germany*

## SPOTLIGHT

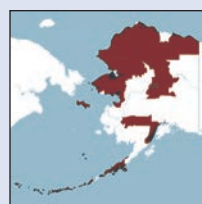
# OPPORTUNITY ZONES

### THE PROGRAM<sup>1</sup>

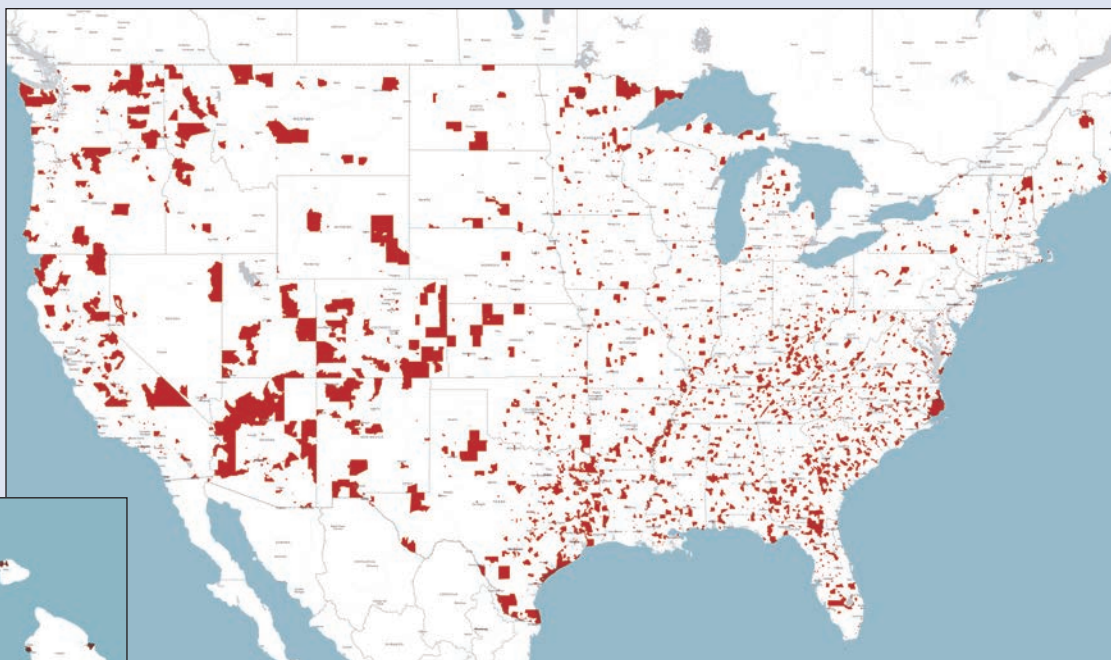
The Opportunity Zone (“OZ”) program was created by the Tax Reform and Jobs Act of 2017 to incentivize long-term private investment in low-income communities (“LICs”) as defined by the 2010 United States Census. State and Territorial Governors and the Mayor of the District of Columbia were permitted to nominate LICs within their jurisdictions and these were in turn confirmed (or denied) as Qualified Opportunity Zones (“QOZs”) by the United States Treasury.

There are now 8,764 QOZs spread across all 50 States, the District of Columbia and 5 US Territories. According to data compiled by the Urban Institute, approximately 35 million Americans live in QOZs, representing an aggregate population roughly equivalent to that of Canada, and the accompanying map illustrates the wide geographic dispersion of QOZs across the United States.<sup>2</sup>

### Opportunity Zones in the United States<sup>1</sup>



*Alaska*



*Hawaii*



*Puerto Rico*

<sup>1</sup> Unless otherwise indicated, data cited in this section was compiled from the Economic Innovation Group (<https://eig.org/>), which also produced the accompanying map; United States Census Bureau (<https://www.census.gov/programs-surveys/decennial-census/decade.2010.html>); U.S. Department of Treasury Community Development and Financial Institutions Fund (<https://www.cdfifund.gov/Pages/Opportunity-Zones.aspx>); and the Urban Institute (<https://www.urban.org/policy-centers/metropolitan-housing-and-communities-policy-center/projects/opportunity-zones>).





<sup>2</sup> Urban Institute data set includes census tract-level data for all 50 States, DC and PR, but excludes data for United States Territories.

Under the OZ program, US taxable investors may avail themselves of certain tax benefits by reinvesting realized capital gains into Qualified Opportunity Funds (“QOFs”) within 180 days of realizing the original gain. The exhibit from North Sky’s tax advisers at KPMG summarizes the potential benefits and are shown in the tables below.

The OZ program’s tax benefits are potentially quite powerful. As illustrated in the chart below entitled “Bringing the Tax Benefits to Life”, our tax advisers at KPMG have estimated that a \$100 million QOF investment made in 2019 which eventually netted a 2.2x multiple when sold after 2029 could provide a US taxable investor with up to \$44 million of tax savings at the federal and state level.<sup>3</sup> Using similar assumptions, we ourselves estimated that a properly structured and managed infrastructure QOF might outperform a traditional infrastructure private equity fund by 400-500 bps over 10 years.<sup>4</sup>

“Properly structured and managed” is the operative phrase in the prior paragraph, however, as the OZ program is highly complex and can be difficult to navigate as a QOF investor or sponsor. Investors must carefully manage their investment timelines and tax filings, while QOF sponsors must remain actively attuned to a host of compliance guidelines. For example, QOFs must invest at least 90% of their assets into the equity or preferred equity of Qualified Opportunity Zone Businesses (“QOZBs”) or Qualified Opportunity Zone Business Property (“QOZBP”) to remain compliant. QOZBs and QOZBP must themselves remain compliant within parameters defined in the original legislation and subsequent regulations released in 2018 and 2019. For example, any QOZBP acquired by a QOF or any subsidiary QOZBs must be “substantially improved” within 31 months to be deemed qualified. Given this complexity, we encourage any investors considering a QOF investment to consult their tax advisers prior to making such an investment.

### KPMG: Potential Income Tax Benefits<sup>3</sup>

<b>FEDERAL BENEFITS</b>		
<b>D</b> <b>Deferral Benefit</b> (Time Value of Money)	Temporary deferral of rollover gains by investing in a QOF until the earlier of the disposition of the investment or December 31, 2026*	
<b>R</b> <b>Reduction Benefit</b> (Basis Step-Up)	Step-up in investment of the rollover gains. Ten percent of the gain may be excluded permanently if the investment is held for five years. An incremental 5% (total of 15%) may be excluded if held for seven years. Both holding periods are through December 31, 2026.	
<b>E</b> <b>Exclusion Benefit</b> (Appreciation Exclusion)	The entire gain from sale of the “interest in” the QOF may be permanently excluded if the investment is held for at least 10 years. The exclusion of this gain relates only to the value increase in the investment in the QOF.	
<b>STATE AND LOCAL BENEFITS</b> <b>Tax &amp; Non-Tax Incentives</b>	Various state and local Governments have conformed to the federal rules. Additionally, project incentives and support may provide added value that could offset as much as 10-15% of project costs.	

\* The deferred gain recognized may be reduced to the extent the fair market value of the investment is less than the deferred gain.

### KPMG: Bringing the Tax Benefits to Life<sup>3</sup>

BENEFIT	TIME-VALUE OF MONEY	FEDERAL TAX BENEFIT	STATE TAX BENEFIT	BENEFIT CALCULATION
<b>D</b> <b>Deferral Benefit</b> (Time Value of Money)	\$6.10 M	—	—	Rollover Gain (\$100M) discounted at an Estimate Rate of Return of 7%
<b>R</b> <b>Reduction Benefit</b> (Basis Step-Up)	—	\$2.10 M	\$0.70 M	Rollover Gain (\$100M) x Basis Step-Up (10%) x Federal and State Tax Rates (estimated at 21% and 7%)
	—	\$1.05 M	\$0.35 M	Rollover Gain (\$100M) x Additional Basis Step-Up (5%) x Federal and State Tax Rates (estimated at 21% and 7%)
<b>E</b> <b>Exclusion Benefit</b> (Appreciation Exclusion)	—	\$25.20 M	\$8.40 M	Appreciation Gain (\$120M) x Basis Step-Up (100%) x Federal and State Tax Rates (estimated at 21% and 7%)
<b>TOTAL BENEFIT</b>	\$6.10 M	\$28.35 M	\$9.45 M	
			<b>\$43.9 M</b>	

<sup>3</sup> KPMG: <https://home.kpmg/content/dam/kpmg/us/pdf/2019/09/opportunity-zones.pdf>

<sup>4</sup> North Sky Q3 Market Commentary: <https://northskycapital.com/news/market-commentary>

## THE PROBLEM

In early 2019, several of our existing investors approached us about organizing a QOF focused on clean energy and sustainable infrastructure projects in QOZs. These clients had capital gains that they wanted to reinvest in a QOF to avail themselves of the tax benefits, produce attractive market-rate returns and create positive environmental and social impact. Like many market participants, they were concerned about flaws in the design and implementation of the OZ program, perceived abuse by certain public and private sector actors and potential negative impacts from certain real estate OZ strategies: bulldozing low-income housing, displacing poorer communities and erecting fancy condos as certain real estate QOFs were proposing to do was neither interesting to our investors nor likely the primary intent of the OZ program.<sup>5</sup> We believe an approach that creates jobs and improves the lives of the people currently living in QOZs is the proper path.

## THE SOLUTION

During 2019, we engaged in a collaborative exercise with our clients to design and launch a QOF strategy (the “QOF Strategy”) that would meet their tax, investment and impact objectives. The goals for this strategy are to (1) earn an attractive investment return, (2) move our country’s energy, waste and water infrastructure towards a more sustainable future and (3) boost economic development and job creation in QOZs.

The QOF Strategy focuses on investments in clean energy, waste and water projects in the United States. This strategy carries on the good work of our two prior infrastructure funds, which have invested approximately \$550 million in 29 infrastructure investments since 2010. These investments total 2.7 GW of anticipated clean energy generating capacity in North America and have produced more than 2 million hours of high-quality green jobs over the past decade. The QOF Strategy is aligned with the following SDGs:



<sup>5</sup> New York Times: <https://www.nytimes.com/2019/10/26/business/michael-milken-trump-opportunity-zones.html>; <https://www.nytimes.com/2019/11/06/business/opportunity-zones-congress-criticism.html>; [https://www.nytimes.com/2019/11/16/opinion/trump-tax-opportunity-](https://www.nytimes.com/2019/11/16/opinion/trump-tax-opportunity-zones.html)

[zones.html](https://www.nytimes.com/2019/11/16/opinion/trump-tax-opportunity-zones.html); Novogradac: Opportunity Zones Resource Center, October 2019: <https://www.novoco.com/notes-from-novogradac/residential-investments-top-novogradac-qof-listings>



# QOZ CASE STUDIES

We are excited to bring our sustainable infrastructure investment experience to bear, creating positive environmental and social impact within QOZs and continuing to help solve some of our country's most critical infrastructure challenges. At the time of writing this report, we are actively sourcing and investing in Opportunity Zones. We look

forward to sharing stories about our impact in low income regions in our next report. However, note that our prior funds had invested in several projects that later turned out to be located within QOZs and are representative of the type of investments that our QOF Strategy is pursuing; here are two examples.

## **SOLAR PROJECT**

**Chelsea** is a 1.2 megawatt ("MW") rooftop solar project that we funded in 2018. It is located in Census Tract #25017342400, a QOZ in Suffolk County, Massachusetts. Chelsea has a 20-year net metering agreement with the City of Somerville, Massachusetts, which is a AA+ rated credit. It was developed and is managed by an experienced developer and operator of solar projects in New England.



*1.2 MW rooftop solar project in Suffolk County, Massachusetts*

## **HYDROELECTRIC PROJECT**

**Turner Shoals** is a 5.5 MW hydroelectric project that we acquired in 2017. It is located in Census Tract #37149920200, a QOZ in Polk County, North Carolina. Turner Shoals has a quasi-evergreen Power Purchase Agreement with Duke Energy Carolinas, LLC, an Aa2/A-rated subsidiary of Duke Energy Corporation (NYSE: DUK), one of the largest power utilities in the United States. It was originally developed in 1925 and is managed by an experienced national hydroelectric operator that has operated Turner Shoals since 1996.



*5.5 MW hydroelectric project in Polk County, North Carolina*

We believe an approach that creates jobs and improves the lives of the people currently living in QOZs is the proper path.

## 7 AFFORDABLE AND CLEAN ENERGY



# Wind and Other Clean Energy

Although it has not posted the same eye-popping growth rates as the solar industry over the past decade, wind power has also enjoyed a remarkable run with US installations growing at an 11% CAGR since 2009.<sup>45</sup> Today, onshore utility-scale wind generating projects enjoy an absolute cost advantage over all other generating types in most places in the United States.<sup>46</sup> As such, it is no surprise that wind accounted for

nearly half of all new generating capacity installed in the United States in 2018.<sup>47</sup> Together with hydroelectric and other emerging generating technologies, wind is an essential ingredient to meeting the world's power demands over the next 30 years, facilitating responsible and sustainable economic growth, and achieving the potential of the current energy transition. These are a few of the companies working to achieve this goal.

### GENERAL FUSION

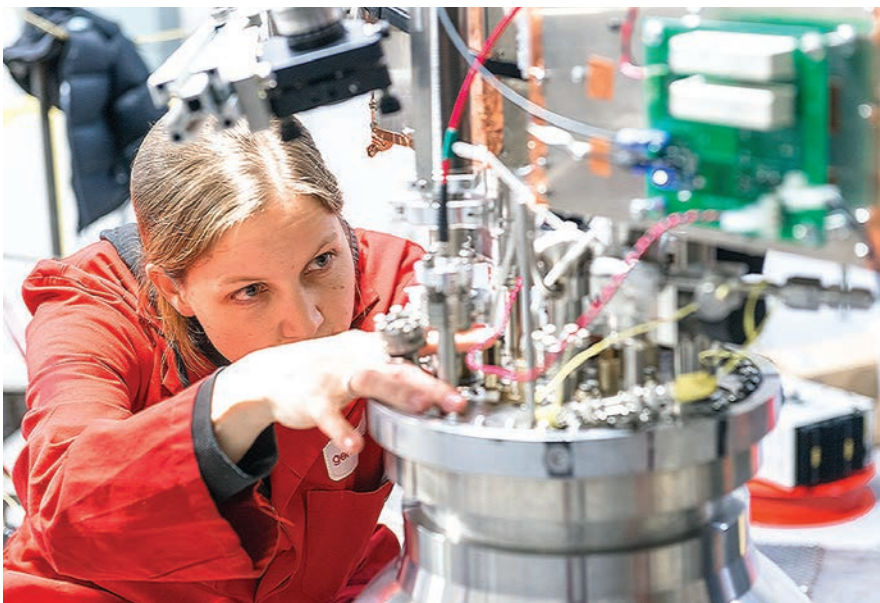
General Fusion is developing a fusion energy system that produces clean, renewable energy. The company is taking a natural process that powers the Sun and recreating those conditions on Earth in a controlled way to generate electricity. The process, called magnetized target fusion, involves superheating and colliding atoms to produce a substantial amount of heat energy. This heat can be used to generate steam and then electricity through traditional methods. Fusion produces zero emissions and requires less land than other renewable technologies. There is zero possibility of a meltdown scenario and no long-lived waste. A fusion power plant runs on isotopes which can be extracted from seawater and there is enough fusion fuel to power the planet for hundreds of millions of years.<sup>48</sup>

### GRAND RIDGE WIND

Grand Ridge Wind is a renewable power project comprising 67 wind turbines totaling 100.5 MW within the Grand Ridge Energy Center, which is located approximately 80 miles southwest of Chicago, Illinois. One of North Sky's infrastructure funds purchased an ownership interest in the project in August 2019. Grand Ridge is operated by Invenergy, a Chicago-based developer, owner and operator of power assets globally, including 96 wind projects totaling 15 gigawatts. Grand Ridge sells power under a 20-year PPA with Appalachian Power Company, a subsidiary of American Electric Power Company ("AEP"), and provides clean electricity to customers in the Commonwealth Edison service territory in Northeast Illinois.

### NORTHBROOK HYDRO

Northbrook Hydro is a portfolio of nine hydroelectric generating facilities located in North and South Carolina with an operating capacity of 30 MW. These facilities use run of the river systems, as opposed to reservoir systems, to generate electricity. Run of the river systems are generally more environmentally friendly because reservoirs can cause top of the river flooding and increase harmful emissions due to decomposition of organic matter that builds up in the reservoir. Northbrook Hydro has a highly experienced operating team capable of efficiently operating and enhancing each site.



General Fusion scientists and engineers are world leaders in fusion technology  
Right, above: NSC Northbrook Hydro site visit  
Right, below: Grand Wind turbines at Invenergy, Grand Ridge, Illinois







## Energy Storage

The dramatic growth of solar and wind deployments over the past decade has created new challenges for how we manage our electric grids and is currently driving increased demand for energy storage in markets with significant renewable content such as California and Texas, which both produce about 30% of their power from renewables today. In its ultimate

form, storage can turn intermittent renewable generating capacity into baseload power by harvesting supply when the sun is shining and wind blowing and dispatching it when it is needed. In 2018, battery storage deployments were up 44% nationwide versus 2017 and are projected to double in 2018-2019, triple in 2019-2020 and reach 4.5 GW annually by 2024.

### ENOVIX

Enovix develops lithium-ion batteries that can double the energy output compared to traditional lithium-polymer batteries. The patented 3D high-capacity silicon-anode structure has pioneered to new levels of improvement in energy density and life cycle capabilities. Their next-generation battery increases energy density by 39% in laptops, 51% in 5G smartphones, and 106% in smartwatches in comparison to conventional lithium-ion batteries. Most of the production process is identical to existing batteries, which enables a competitive, low-cost structure at scale. Operations consist primarily of mobile devices; however, the intention is to expand into the electric vehicle market to focus on gravimetric energy density within the next 3-5 years. As the company continues to grow, so will their patents. Currently, they have over 70 patents, with more than 40 pending. The company's noteworthy strategic partners include Intel, Qualcomm, and Cypress.



*Enovix 3D Silicon Lithium-ion rechargeable battery*

### STEM

Stem operates the world's largest energy storage network with more than 400 MWh installed across 1,000 project sites for more than 300 customers, including more than 30 Fortune 500 companies<sup>49</sup> — doubling their storage capacity since our 2018 Impact Report. Stem holds over 20 patents covering its proprietary software that controls the charging and discharging of its energy storage systems. The company works with its customers to design energy storage systems

that save money through peak load shaving (battery dispatches power during peak hours of the day when grid pricing is at its highest) and that provide back-up power and enhanced reliability. Energy storage systems allow many customers to also incorporate renewable energy generation systems (typically solar) onsite. Well-known customers include Owens Corning, Adobe, Marriott, Sheraton, Macy's, AMC, Whole Foods, Albertson's, UPS and Saint-Gobain.



*Stem 1.25 MWh battery system installed at a school in Southern California.*

The Enovix next-generation battery increases energy density by 39% in laptops, 51% in 5G smartphones, and 106% in smartwatches in comparison to conventional lithium-ion batteries.

## ZINC FIVE

ZincFive is a provider of innovative battery solutions powered by nickel-zinc. Nickel-zinc batteries have several advantages over alternative battery chemistries:<sup>50</sup>

- High energy density: ZincFive batteries offer dramatically higher energy density than lead-acid batteries and comparable energy density to high power lithium-ion batteries
- Superior power density: ZincFive batteries are less than half the size of a typical lead-acid battery
- Lower cost: zinc provides a significant total cost of ownership savings over other rechargeable batteries
- Safety: zinc presents no threat to the environment; nickel-zinc batteries are non-flammable and fail-safe and are recommended in applications where physical safety is essential
- Charge/discharge rate: Nickel-zinc batteries retain stability during high discharge rates and are capable of fast recharging
- Cycle life: ZincFive's battery has more than twice the life of typical lead-acid batteries and has a comparable life compared to lithium-ion batteries.
- Long shelf life: ZincFive's battery has a significantly longer shelf life than lead-acid batteries and requires no maintenance

On top of the performance benefits of nickel-zinc batteries, these batteries are one of the most recyclable battery chemistries on the market. Both nickel and zinc can be recycled while maintaining physical and chemical properties. There remains the same amount of each element at the end of a particular product cycle as at the beginning.<sup>51</sup>



*ZincFive rechargeable nickel-zinc (NiZn) battery*



## Efficiency

Among its targets, SDG 7 seeks to “double the global rate of improvement in energy efficiency.”<sup>52</sup> With demand for energy resources growing, it is more important

than ever for all of us to find solutions that optimize energy consumption so that we can continue to do more with less. The following companies illustrate how the goal of increasing efficiency is benefiting a wide range of industries.

### CARBON LIGHTHOUSE

Carbon Lighthouse is a provider of energy efficiency services. The company's software analyzes data collected from sensors throughout a building to optimize energy consumption by adjusting temperature, HVAC amperage and motor speeds, lighting, energy backup systems and other factors based on weather and building occupancy. Unlike competitors, Carbon Lighthouse does not require capital-intensive hardware upgrades to HVAC and light systems, but rather focuses on eliminating wasteful consumption. The company also offers a turnkey solar solution.

Carbon Lighthouse enables customers to achieve 20-30% energy savings with no disruption to building occupants.<sup>53</sup> Since inception, Carbon Lighthouse has

had the following significant impacts on our environment:<sup>54</sup>

- 193,567,677 pounds of coal not being burned
- 432,911,980 miles not driven by an average passenger vehicle
- 8.7 average points increase in Energy Star ratings
- 16 states with Carbon Lighthouse buildings



*Carbon Lighthouse converts the Hawaiian Airlines Airport Center into an energy-efficient workspace*

### RENEW FINANCIAL

Renew Financial is a provider of renewable energy and energy efficiency financing solutions, including property assessed clean energy (“PACE”) financing. This is a nationally recognized specialty finance company for residential and commercial energy efficiency, which provides origination and servicing capabilities. The company also offers a finance platform with a lower cost of capital for energy efficiency-related loans. PACE financing offers an array of ESG benefits to homeowners, contractors, and governments. Homeowners can construct affordable home improvements



*Renew Financial headquarters*



through upfront funding that does not require a credit check, since it is based on a percentage of home equity. Contractors reap the benefits of untapped financing solutions for property owners and exposure to advanced technology systems. Local governments have the ability to create jobs, generate affordable financing solutions, and suppress utility costs within their communities.

One state that has embraced the impact from PACE financing is California. CaliforniaFIRST, a program administered by Renew Financial, offers no FICO requirements, reduced fixed interest rates, and longer-term financing for homeowners. More than 27 million residents have pursued a solar panel installation, window, door, HVAC, roofing, landscaping, earthquake prevention, or seismic retrofit project to upgrade their property. These home improvements allow participants to repay the financed amount on property taxes as opposed to a monthly bill. This program has supported projects that are worth millions of dollars and emerged as the ideal model for other states considering implementing PACE financing.

## UPLIGHT

Uplight is a provider of residential energy efficiency and customer engagement systems. Uplight was created in 2019 through the merger of five companies, including our portfolio companies Tendril and FirstFuel. More than 80 utilities worldwide use Uplight to track customer energy usage and engage with the customer through personalized reports, data and energy suggestions to enable the customer to make informed decisions about (a) their energy usage, (b) available rebates for lighting, smart thermostats and solar PV, energy storage and electric vehicle (EV) charging systems and (c) participating in

demand-response programs. This engagement has been shown to reduce energy usage, with utility partners achieving an average of 1.8% savings per household and 3.3 TWh of total energy savings so far.<sup>55</sup>

In addition to the energy savings noted above, Uplight's benefits include:<sup>56</sup>

- Doubling the energy efficiency savings from smart thermostats.
- Reducing peak load from HVAC systems by up to 50%.
- Helping to transition the world to an EV future.



*Uplight brings together leaders in utility-branded marketplaces, demand management, analytics, and utility customer experience personalization*



## Transportation

SDG 9 ("Industry, Innovation and Infrastructure") aims to "build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation."<sup>57</sup> Its first target is transportation, highlighting the need to "develop quality, reliable, sustainable and resilient infrastructure...to support economic development and human well-being." In the United States, transitioning the transportation sector to a more sustainable future is closely linked to the adoption of electric vehicles ("EVs") and

the creation of the necessary support infrastructure, most notably charging stations. The EV market in the United States grew by 81% in 2018 to represent 2.1% of annual vehicle sales.<sup>58</sup> According to the Edison Institute, the EV market is expected to grow at a 28% CAGR over the next decade to 20% of annual vehicle sales by 2030.<sup>59</sup> In 2018, EVs represented 9% of new vehicle sales in California, the most developed EV market in the US.<sup>60</sup> The following companies are working to advance a more sustainable future for the transportation sector.

## AGILITY FUEL SOLUTIONS

Agility Fuel Solutions provides clean fuel solutions for over medium- and heavy-duty commercial vehicles. Customers include Waste Management, Republic, UPS, FedEx, AB InBev, Frito Lay, Freightliner, Volvo, Mack, Kenworth, NovaBus, Motor Coach Industries, Renault Trucks, Mahindra, Yutong and Ford across 10 global locations. Solutions include natural gas, hydrogen and battery electric energy storage and delivery systems. Agility's systems enable the safe and effective use of

natural gas, propane, hydrogen and electricity as transportation fuels, reducing emissions while saving money for fleet operators and their customers.

In 2019, Agility introduced a high-performance battery pack and complete electric vehicle drivetrain for medium- and heavy-duty trucks. These systems are being delivered to multiple truck OEM electric vehicle programs and are the lightest battery packs available for commercial vehicles. The company's battery



*An Agility Fuel Systems LNG fuel tank at an industry trade show*

pack design wraps around the truck's frame rails to efficiently use this space, while also lowering the truck's center of gravity and enhancing safety. Packs are designed to handle tough commercial trucking duty cycles and environmental conditions.<sup>61</sup>

### LUCID MOTORS

Lucid Motors is building an all-electric luxury car, the Lucid Air, with world-class range and efficiency. The company is based in Newark, California with production facilities in Arizona. Groundbreaking battery technology, marketed under the Atieva brand name, allows class leading EPA range and ultra-fast charging with minimal battery degradation.<sup>62</sup> Notably, Lucid builds the battery packs used in Formula-E race cars.

The Air's highly efficient power electronics enable over 400 miles of range with an impressive 0-60 mph time of under 2.5 seconds and a top speed of over 200 mph.<sup>63</sup> The company has demonstrated that its drivetrains are lighter and more powerful than those of its current competition. For example, the Air's drivetrain weighs approximately 18 kg and delivers 450 kw of power compared to 25 kg and 211 kw of power for the Tesla Model 3. Production of the Air is expected to begin in 2020.



*Lucid Motors' all-electric luxury car, the Lucid Air*

The company is preparing its cars to be autonomous ready. With over-the-air software upgrades, Lucid Air will be able to transition through levels of autonomy as they become available.

Lucid Motors entered into a preliminary agreement with Electrify America to provide its customers a nationwide charging plan. Electrify America is investing \$2 billion over ten years in zero emission vehicle infrastructure, education and awareness initiatives to help drive adoption. Electrify America CEO Giovanni Palazzo noted, "Our high-powered, nationwide network of chargers is a great match with the EV technology offered by Lucid and a further opportunity to expand electric vehicle adoption in the U.S."<sup>64</sup>

### NANOSTEEL

NanoSteel is an advanced materials company specializing in the design and commercialization of new advanced steels. The company produces high strength steels that help manufacturers build lighter, higher efficiency vehicles without compromising safety and ride quality. NanoSteel has developed a new class of advanced steel that is stronger than its predecessors, allowing automakers to use thinner gauges of steel to reduce the weight of automotive parts, structural supports

and car bodies. This steel in sheet form is easy to work with and can be formed into parts at room temperature, leveraging existing metal stamping infrastructure. This advanced steel can also be used in 3D printers for precision auto and industrial applications such as complex car/ag/mining parts, stators, valves, gears and tools.

NanoSteel is a much more desirable option than aluminum, another lightweight metal, for vehicle body structures. NanoSteel is twice as strong as aluminum, three times stiffer, has four times the elongation (formability) and is significantly more affordable. While aluminum is acceptable for exterior panels where strength is not necessary, NanoSteel is the clear choice for vehicle body structures due to its low cost, light weight and safety.<sup>65</sup>



*NanoSteel has developed a new class of advanced steel to reduce the weight of automotive parts, structural supports and car bodies*

NanoSteel is twice as strong as aluminum, three times stiffer, has four times the elongation (formability) and is significantly more affordable.



## Smart Cities, Smart Grids

SDG 11 (“Sustainable Cities and Communities”) aims to “make cities and human settlements inclusive, safe, resilient and sustainable.”<sup>66</sup> Over the past decade the emergence of the “Internet of Things” (“IoT”) has opened new possibilities for creating more sustainable and efficient systems. Following the Great Recession, the United States and Canada made

significant investments in smart meters. Today, smart meters enjoy about 60% market penetration in North America and are expected to reach 80%+ by 2024.<sup>67</sup> Together with better and more widely deployed sensor technology and massively increased computing power and data center capacity, these developments are opening up new possibilities for how we construct and manage the built environment. The below companies are at the forefront of these innovations.

### ENBALA

Enbala is a smart grid company that unobtrusively balances and matches available electricity generation with electricity demand in an increasingly complex system. As our grid becomes more decentralized and as more renewable electricity and energy storage capability comes online, technology is required to keep the grid reliable, flexible and effective. Enbala delivers that technology to utilities, consumers and other related parties, enabling sub-second response to new generation and new load demands that hit the grid. Enbala’s technology stitches together vast networks of connected parties to create a resilient network that will enable the grid to continue to transition from centralized power generation to decentralized (or distributed) power generation and from legacy generating technologies to those of a sustainable energy future.

The Enbala Engine uses machine learning algorithms to understand and forecast demand for electricity, while simultaneously providing real-time control and optimization of, and delivery of electricity from, an unlimited variety and number of distributed energy generation resources. The technology is massively scalable and currently manages millions of distributed energy resources in seconds and on a global scale. Electric utilities and grid

operators like New Brunswick Power, PJM Interconnection (grid operator within 13 states including Pennsylvania, New Jersey and Maryland) and IESO (grid operator in Ontario Canada) are among its many customers.<sup>68</sup>

### EnOCEAN

EnOcean is a developer of self-powered wireless technologies for use in building automation, smart home, the IoT and outdoor environmental monitoring. The company’s ultra-low power switches and sensors harvest energy from their surrounding environment through motion, light and temperature differences. Using surrounding energy sources eliminates the need for disposable batteries or external power from non-renewable resources. EnOcean products can be used for decades and are compatible with common network protocols (e.g., Bluetooth Low Energy and ZigBee). These energy-efficient switches and sensors have been installed in around one million buildings worldwide in factories, offices, multi-occupancy buildings and single-family dwellings.



*EnOcean sensor module used in building automation*

### TRILLIANT

Trilliant is a worldwide provider of smart city technology through meters, sensors, IOT, lighting, demand response and other means. Through data capture, analytics and control technology, Trilliant enables intelligent collaboration between utilities and cities to improve efficiency, reliability and coordination of energy supply and demand.<sup>69</sup>

A prime example of Trilliant’s technology is its smart street lighting solution, which allows municipalities to manage street lighting with real-time visibility and control to match lighting power to ambient lighting conditions and real-time need. Using this tech, customers can realize up to 60% energy savings while simultaneously saving 35% on operating expenses through condition-based maintenance (rolling trucks only when needed to repair light poles or replace bulbs). Advanced street lighting features include air quality sensors, traffic counting, autonomous vehicle assistance and the ability to flash street lights when crime is detected to deter criminals and alert nearby police. Beyond street lighting, Trilliant’s systems can also manage (a) smart meters for water, gas and electricity, (b) grid automation, (c) EV charging stations, (d) city-wide security/video systems and (e) demand response infrastructure.<sup>70</sup>



*Enbala European electrical tower (European Virtual Power Plants)*



*Trilliant Smart City street lighting solution*





## Waste

SDG 12 (“Responsible Consumption and Production”) aims to “ensure sustainable consumption and production patterns.”<sup>71</sup> Its targets include achieving “sustainable management and efficient use of natural resources,” halving global food waste, achieving “environmentally sound management of chemicals and all wastes”, and reducing “waste generation through prevention,

reduction, recycling and reuse.” As the world’s population grows and resources are depleted, reusing products and reducing waste becomes increasingly important. Today, both companies and consumers are more aware of the environmental impacts of commerce and demand sustainable products and practices. Here are a few companies that are creatively reducing waste and decreasing our impact on the environment.

### ENERKEM

Enerkem is a developer of biofuels and renewable chemicals from waste. The company converts non-recyclable municipal solid waste into methanol, ethanol and other widely used chemicals. Enerkem’s waste recycling process requires relatively low temperatures and pressures, reducing energy requirements and costs. The company’s solution is complementary to recycling and

composting, using waste materials that would normally be destined for landfills or incineration (e.g., textiles, non-recyclable plastics and food containers). On average, Enerkem’s bio-dimethyl ether is higher quality than diesel or bio-diesel fuels.<sup>72</sup>

In addition to the environmental benefits, the company’s waste conversion method is twice as capital efficient compared to other ethanol

production methods.<sup>73</sup> Enerkem’s Edmonton, Alberta plant processes more than 100,000 tons of waste annually, which is used to generate ten million gallons of ethanol. The company plans to have eight facilities in four provinces by 2030.<sup>74</sup>



*Enerkem is producing methanol and ethanol at its Edmonton, Alberta, plant*



## HYLA MOBILE

At its core, HYLA is a mobile phone recycling business. The company offers a mobile phone trade-in program powered by powerful analytics to its customers, such as large corporations, wireless phone carriers, insurers and device manufacturers. Customers use HYLA's technology, predictive pricing data, insurance programs and seamless collection and distribution capabilities to determine



*HYLA offers a mobile phone trade-in program*

which phones to purchase for employees, to insure phones against breakage and to recycle phones at the end of their "first life." HYLA provides pricing information to customers, particularly those who make large volume purchases of phones, to enable them to make intelligent choices about true cost of ownership, average lifespan and ultimate trade-in value for mobile phones. The company also makes it easy to recycle phones in small or large quantities by seamlessly taking care of phone collection, data sanitizing, inspection, warehousing, reselling and recycling.

HYLA offers economic and ecological benefits across both emerging and developed markets. Since inception, HYLA has diverted over 18.3 million pounds of e-waste from landfills and facilitated the transactions of 53 million devices worth \$6 billion in value.<sup>75</sup>

## WASTE RESOURCE MANAGEMENT

Waste Resource Management ("WRM") is an environmental services company focused on liquid waste transportation, processing and recycling services. In particular, WRM specializes in removing, transporting, recycling and disposing of grease trap waste, serving more than 6,000 clients in Florida, Illinois, Nevada and Texas. On average, US restaurant grease traps alone produce about 13 pounds of waste per person per year.<sup>76</sup> While this can create a major problem for municipal wastewater treatment plants to deal with, it's also an example of a renewable resource that can be recycled into usable by-products and energy. WRM and its subsidiaries are committed to sustainable operations.



*Waste Resource Management removes grease trap waste from the wastewater treatment system*

HYLA makes it easy to recycle phones in small or large quantities by seamlessly taking care of phone collection, data sanitizing, inspection, warehousing, reselling and recycling.

# 20 North Sky CAPITAL YEARS

At North Sky we are focused on making the world a better place and the opportunities that lie ahead of us. However, a brief glance over our shoulders at our 20 year Anniversary shows a large and growing opus of notable impact investments. Our investments have ranged from early stage venture investments in innovative tech and healthcare companies to building solar and wind farms and nearly

everything in between. These investments span sectors such as renewable energy, electric vehicles, healthy food & beverages, indoor ag, sustainable timber, wetlands mitigation, pharmaceuticals, medical devices, energy storage, pet care, grid optimization, energy efficiency, waste reduction and more. Below are some of the highlights so far.



**A Place for Mom**  
Sold to  
Silver Lake & General Atlantic



**Agility Fuel Solutions**  
Sold to  
Hexagon Composites



**AquaVenture**  
IPO / Culligan



**Bare Foods**  
Sold to  
Pepsico



**Caring.com**  
Sold to  
Bankrate



**Castlight Health**  
IPO



**Climatec**  
Sold to  
Robert Bosch



**CPower**  
Sold to  
Constellation



**Cypress Creek**  
Refinanced by  
HPS and Temasek



**DIRTT**  
IPO



**Education.com**  
Sold to  
ILX Learning



**Fiberon**  
Sold to  
Fortune Brands Home & Security



**FirstSolar**  
IPO



**Florida Food**  
Sold to  
MidOcean Partners



**FLS**  
Acquired by  
Cypress Creek



**The Hain Celestial Group**  
IPO



**Health & Safety Institute**  
Acquired by  
Waud Capital Partners



**lcyne**  
Sold to  
Huntsman



**Living Earth**  
Sold to  
Bain Capital Double Impact



**LRI**  
Acquired by  
Evensol



**New Forests**  
Private financing



**OpTerra Energy**  
Sold to  
Engie

**Point Loma**  
Wastewater Treatment Plant

**Point Loma**  
Acquired by  
Trillium



**Pure Technologies**  
IPO



**Slim-Fast**  
Sold to  
Glanbia



**SolarCity**  
Sold to  
Tesla



**Soltage**  
Acquired by  
CleanCapital



**SpaceX**  
Private secondary sale



**Sprouts Farmers Market**  
IPO



**SunEdison**  
Refinanced by  
construction lender



**TAS Energy**  
Sold to  
Comfort Air Systems



**Tendril**  
Private financing



**Tesla Motors**  
IPO



**TPI**  
IPO



**Ygrene**  
Refinanced by  
JP Morgan Asset Management



**Z-Medica**  
Acquired by  
Linden Capital Partners

After two decades of operations, the knowledge and capabilities of our investment team are stronger than ever, as is our desire to keep innovating.



# Conclusion

We are now beginning to invest out of our 8th impact fund. For many years now, we have been investing with the goals of earning an attractive return and doing good in the world. We are proud of our role funding game-changing companies in areas such as food, water, transportation, energy and healthy living & aging, as well as our financing of clean energy, waste and water infrastructure projects.

Nature's resources are finite. The human condition varies dramatically from region to region and even from person to person within the same region. For those of us having the presence of mind to recognize this, and the means to do something about it, the time to act is now. Together, we can make the world a better place. We can make our air and water cleaner, our food healthier, our industries less harmful to the environment, our communities safer and right the wrongs of abuse, neglect and inequality. We can use our investment capital to effectively drive much needed social and environmental change—and we have shown you can do so while earning a good return. Talk about a win-win.

We are blessed to have the support of like-minded investors seeking to align their values with their investment portfolios. It has been our distinct pleasure to have assembled such a terrific portfolio of impact companies and projects over the last 15 years. We look forward to the next chapter and hope you will join us in writing it. For more information, please contact us or visit [www.northskycapital.com](http://www.northskycapital.com).

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## Acknowledgments

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Great opportunity  
lies ahead. These are  
exciting times to be an  
impact investor, and we  
hope you will join us  
in building a cleaner,  
brighter tomorrow.



# Endnotes

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