2020

RESILIENT & RENEWABLE PORTFOLIO STANDARDS BENEFITS & IMPACTS ANALYSIS

REPORT BY GCR INC.

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I. Key Takeaways

The Renewable Portfolio Standard proposed to the New Orleans City Council by the Energy Future New Orleans coalition, called the Resilient and Renewable Portfolio Standard, would have the greatest positive impacts on the City of New Orleans as compared to alternate proposals from Entergy New Orleans the City Council's regulatory Advisors.

The EFNO R-RPS proposal offers the greatest the potential for local clean energy growth, including capital investment and jobs, reduced pollution, and truly resilient renewable energy development within Orleans Parish.

- By 2040, the EFNO scenario projects **341 MW** of local solar, compared to only 106 MW in the ENO scenario and 120 MW in the Alt. 2 scenario.
- IMPLAN estimates a total of **3,157 jobs** will be supported throughout the construction of local solar in the EFNO scenario with **$164.7 million** in direct labor income.
- The EFNO scenario supports approximately **387 jobs** for ongoing operations and maintenance by 2041.
- EFNO scenario would reduce carbon emissions by **53,520 tons** from 2023 to 2040.

II. Introduction

Audubon Louisiana, a member of the Energy Future New Orleans Coalition (EFNO), has commissioned this report on the benefits and impacts of a Resilient and Renewable Portfolio Standard (R-RPS) for the City of New Orleans. The report examines three scenarios based on existing conditions and proposed rules for the creation of an R-RPS. The report begins with a survey of resilient and renewable energy benefits and impacts, which provides a summary of research on the topic. The report then details the modeling process and summarizes the estimated economic and environmental impacts of each scenario.

Background

In March of 2019, the New Orleans City Council established Docket No. UD-19-01 and opened a rulemaking proceeding to establish renewable energy portfolio standards through Resolution R-19-109. A renewable portfolio standard (RPS) requires utility companies to increase the amount of energy being generated by renewable sources, such as solar, wind, and geothermal. By increasing the amount of renewable energy in a market, an RPS decreases the use of fossil fuels that cause pollution and impact air quality and climate change. By expanding the use of renewable energy in a market, an RPS increases access for local residents and businesses to participate in the renewable energy market.

As a part of the rulemaking procedure in Docket No. UD-19-01, Council requested feedback on the following key questions:[1]

- What would an appropriate RPS target for New Orleans be, and should it be a requirement or a goal?
- How should a New Orleans RPS target be satisfied?

[1] New Orleans City Council. 2019. Docket No. UD-19-01. https://council.nola.gov/committees/utility-cable-telecommunications-and-technology/dockets/establishing-a-docket-and-opening-a-rulemaking-pro/

- How should the RPS standard be enforced, should the Council consider a penalty or Alternative Compliance Payment structure?
- What protections should be put in place to protect ratepayers from unreasonable increases in rates due to RPS?

Local stakeholders provided an array of targets, goals, and structures to Council. EFNO proposed a mandatory resilient-renewable portfolio standard that focuses on local renewables/resources and economic development through the growth of solar and microgrid/battery systems. Entergy proposed a voluntary clean energy standard that includes existing renewable energy with the goal of reaching 70 percent "clean" energy. Entergy's proposal also included local demand side management and energy efficiency programs. The New Orleans Council Advisors proposed three alternatives that would be mandatory and require varying levels of renewable energy requirements. The Center for Climate and Energy Solutions also put forth a plan for a mandatory clean/renewable energy standard. Although Air Products did not put forth a proposal but did declare opposition to a mandatory RPS. The proposals submitted to Council are the basis for the economic and environmental benefits analysis within this report and are described in further detail in the methodology section.

III. Survey of Resilient and Renewable Energy Benefits and Impacts

An assessment of resilient and renewable energy benefits and impacts reveals how a system shift could contribute to improved quality of life for New Orleans residents. Prospects such as enhanced reliability of electricity delivery during weather events, more consistent pricing in the face of extreme temperature fluctuations, increased job opportunities, and decreased pollution would all lend to the protection of the lifestyle and environment New Orleanians hold dear, and to the creation of a more equitable, economically viable, and resilient community.

Equity

An equitable energy system takes into account not just availability of energy, but the affordability and sustainability of that system—especially as it relates to our most vulnerable populations.

Establishing renewable energy systems does require upfront investment, which is often passed on to the consumer. However, most renewable energy sources, such as wind and solar, operate at a low cost once infrastructure is in place. Supply is also steady and readily available, resulting in more stable and sustainable prices over time. [2] When a household can reliably access consistently priced energy, they are less prone to financial uncertainty from season to season.

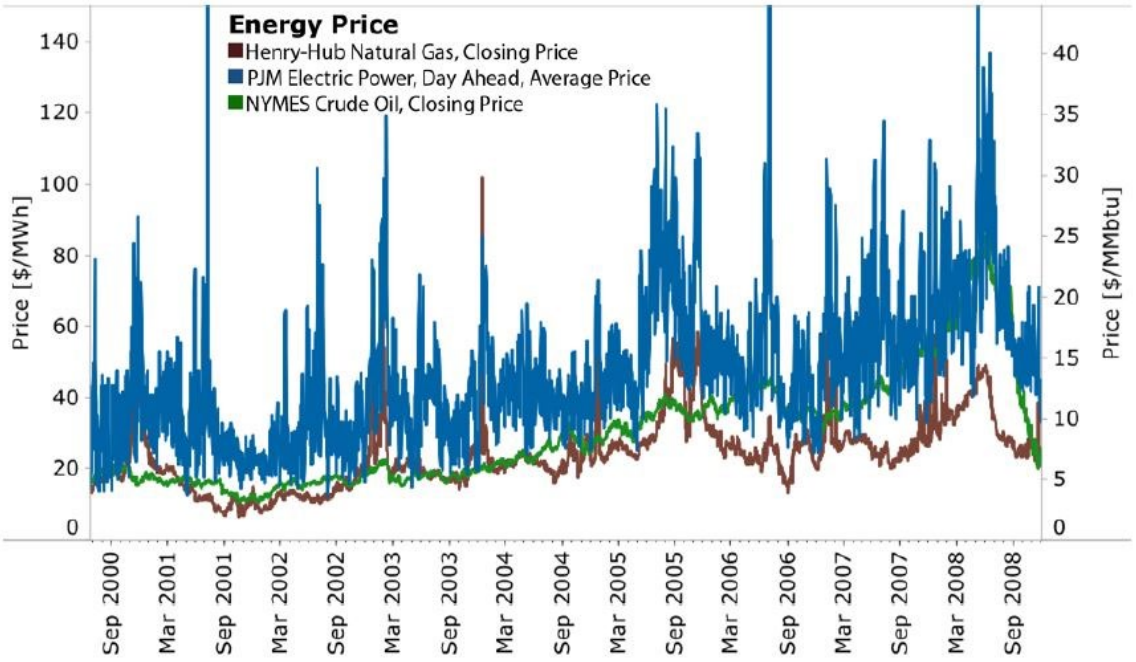
The costs of renewable energy technologies have also declined steadily over the last decade and are expected to continue to fall. For example, the average price to install solar decreased by more than70 percent from 2010 to 2017.[3] The cost of generating electricity from wind dropped 66 percent between 2009 and 2016.[4]

[2] Union of Concerned Scientists. 2017. Benefits of Renewable Energy Use. Union of Concerned Scientists. Available at: https://www.ucsusa.org/resources/benefits-renewable-energy-use

[3] SEIA. 2017. Solar Market Insight Report 2017 Q2.

[4] AWEA. 2017. AWEA U.S. Wind Industry Annual Market Report: Year Ending 2016. Washington, D.C.: American Wind Energy Association.

Additionally, Community Solar programs allow customers to access clean energy if they rent or are unable to install rooftop solar panels.[5] In fact, many Community Solar programs are designed to offer benefits to low-income customers.[6] In 2015, the state of Colorado established a Community Solar program which requires utility companies reserve at least 5 percent of their renewable energy purchases for eligible low-income participants.[7] Colorado also directs utilities to establish and implement plans to include low-income customers as subscribers to a community solar garden.[8] The project aims to demonstrate the feasibility of building 100 percent low-income community solar models and to reduce the overall household energy burden.[9]



Source: NREL. Brian Bush, Thomas Jenkins, David Lipowicz, and Dougles J. Arent: Variance Analysis of Wind and Natural Gas Generation under Different Market Structures: Some Observations.

As seen in the figure above, there is significant correlation and volatility among daily price variations of natural gas, oil, and electricity.[10] For risk-averse consumers and producers, and vulnerable populations who are impacted by fluctuations in monthly bills, power generation technologies that can provide electricity without price risk offer an advantage over technologies

[5] 2018. White Paper of the Council's Utility Advisors Regarding Community Solar and Other Shared Distribution Energy Resources. https://council.nola.gov/council/media/Assets/Committees/Utility/White-Paper-on-community-solar(107122241_5).pdf.

[6] Ibid.

[7] Interstate Renewable Energy Council: Model Rules for Shared Renewable Energy Programs, at 15, http://www.irecusa.org/wp-content/uploads/2013/06/IREC-Model-Rules-for-Shared-Renewable-Energy-Programs-2013.pdf

[8] NRRI. Tom Stanton, Kathryn Kline: The Ecology of Community Solar Gardening: A 'Companion Planting' Guide, at 20, https://www.all4energy.org/uploads/1/0/5/6/105637723/2018_06_08_ud-18-03_cno_white_paper_on_community_solar_.docx.

[9] Colorado Energy Office. 2019. https://energyoffice.colorado.gov/community-solar-0

[10] NREL. Brian Bush, Thomas Jenkins, David Lipowicz, and Dougles J. Arent: Variance Analysis of Wind and Natural Gas Generation under Different Market Structures: Some Observations. https://www.nrel.gov/docs/fy12osti/52790.pdf

with price risk.[11] Renewable energy technologies such as wind and solar have a zero-cost fuel characteristic.[12] Because they are dependent on when the wind blows or the sun shines there is still some revenue risk. However, adding a large amount of wind or solar to an electric system can be expected to reduce the variance in the electric system costs and in turn the variance of similar costs passed through to consumers.[13]

Economic Development

Local, well-compensated jobs, tax revenue, and avoided losses from disruption are some of the economic benefits anticipated to come with the transition to a cleaner and more renewable energy mix.

Clean Energy Jobs

Clean energy jobs provide several benefits to the individuals to holding those positions and to the local economy. Individual benefits include location, higher wages, and greater job security.

For example, solar photovoltaic installers tend to be locally based in order to assemble, install, and maintain solar panel systems on rooftops. Solar systems are generally under warranty for at least 25 years, creating a long-term need for maintenance positions. Due to the distributed and scattered nature of solar photovoltaic systems, these positions may be difficult to automate or outsource. According to a recent report from the Brookings Institute, clean energy jobs have higher and more equitable wages when compared to all workers nationally: [14]

- Average hourly wages for clean energy workers exceed national averages by 8 to 19 percent.
- Workers at lower ends of the income spectrum can earn $5 to $10 more per hour in clean energy jobs when compared to other jobs.
- Many clean energy positions have lower educational requirements than other jobs with similar compensation levels.

Many jobs in the renewable energy industry require little-to-no previous experience and emphasize an on-the-job training approach. In addition to on-the-job training, Brookings forecasts a need for short-term certificates and Associate degree programs that emphasize energy science curricula to better prepare a diverse set of job seekers to fill positions. Local, well-paying jobs with low educational requirements could have a significant impact in communities like New Orleans, where 63 percent of persons over the age of 25 do not have a bachelor's degree.[15]

The renewable energy industry also creates white-collar job opportunities in sales, logistics, and professional services, such as accounting and legal services. In Louisiana, firms that install, repair, and

[11] NREL. Brian Bush, Thomas Jenkins, David Lipowicz, and Dougles J. Arent: Variance Analysis of Wind and Natural Gas Generation under Different Market Structures: Some Observations. https://www.nrel.gov/docs/fy12osti/52790.pdf
[12] Ibid.
[13] Ibid.
[14] Brookings Metropolitan Policy Program. Muro, Mark, Adie Tomer, Ranjitha Shivaram, and Joseph Kane. 2019. Advancing Inclusion through Clean Energy Jobs. Washington, D.C. https://www.brookings.edu/wp-content/uploads/2019/04/2019.04_metro_Clean-Energy-Jobs_Report_Muro-Tomer-Shivaran-Kane_updated.pdf
[15] U.S. Census Bureau. 2017. Educational Attainment, 2013-2017 American Community Survey 5-year estimates. https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF

sell solar energy equipment must hold a construction license with an additional classification for solar energy equipment. [16]

Tax Revenues

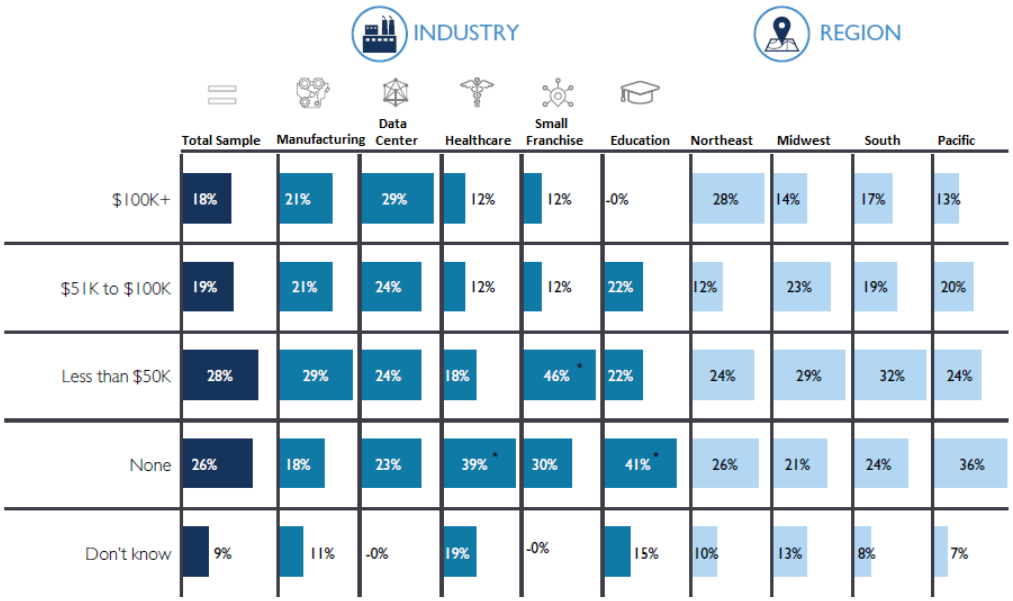
Residential and commercial renewable energy projects are likely to generate both property and income taxes. Considered "improvements," renewable energy systems and energy efficient upgrades can increase the property value of existing structures, resulting in an increase in property taxes. According to the Appraisal Journal, implementing energy efficiency measures provides a multiplier effect where every $1.00 saved in annual energy costs is roughly equal to a $20.00 increase in value.[17]

Alternatively, a new commercial renewable energy project will generate property taxes by improving a vacant or underutilized parcel. Entergy New Orleans estimated that its 5 megawatt rooftop solar project will generate as much as $5.4 million of total revenues for the City of New Orleans.[18]

Avoided Costs of Disruption

Power outages result in a variety of losses for impacted customers: from lost time and work product, to lost goods and sales, to more severe impacts to healthcare equipment and public safety operations. In a market research study conducted by E Source, over 50 percent of respondents indicated that

Chart 8: U.S. C&I Financial Impact of the Worst Power Outage, 2017



n = 251

Source: S&C Electric Company, Frost & Sullivan. 2018. State of Commercial & Industrial Power Reliability Report.

[16] Department of Examinations and Assessment. 2017. Solar Energy Equipment Classification. Baton Rouge, Louisiana. Louisiana State Licensing Board for Contractors. https://www.lslbc.louisiana.gov/wp-content/uploads/cib/cib_com_solar.pdf

[17] Nevin, Rick and Gregory Watson. 1998. Evidence of Rational Market Values for Home Energy Efficiency. The Appraisal Journal. https://www.appraisalinstitute.org/file.aspx?DocumentId=886

[18] Application of Entergy New Orleans, Inc., for Approval to Construct Distributed Generation-Scale Solar Photovoltaic Systems and Request for Cost Recovery and Related Relief CNO Docket No. UD-17-05. https://www.all4energy.org/uploads/1/0/5/6/105637723/2018_05_11_ud-17-05_eno_aip.pdf

power outages of 30 minutes or more were "the shortest duration of a power outage that creates a noticeable problem for [their] facility" (E Source, 2015).[19] In a report from S&C Electric, a Chicago-based firm, 36 percent of commercial and industry customers survey in the South reported financial impacts of over $50,000.[20]

An analysis by the Alliance for Affordable Energy, a Louisiana-based watchdog and consumer advocacy organization, estimated the cost of interruptions to small commercial and industrial customers, such as restaurants and retail, to be an average of $1,537.42 per power outage.[21] The same report found that the New Orleans market experienced longer and more frequent outages than the majority of other areas in Louisiana and the national average, controlled for unavoidable weather events.

Distributed, alternative energy systems can reduce the impacts of outages through back up power. For example, during Hurricane Harvey, 18 HEB grocery stores in Houston, Texas were able to continue operations due to connections to a microgrid system. Not only did these locations avoid business interruption, they were able to provide critical access to food, fuel, and water to impacted residents, and in one location, electricity to first responders coordinating rescue efforts.[22]

[19] E Source Companies LLC. 2015. Reliability, Resiliency, Storage, and Microgrids 2015: The Business Customer's Perspective. USA: E Source. https://www.esource.com/market-research/reliability

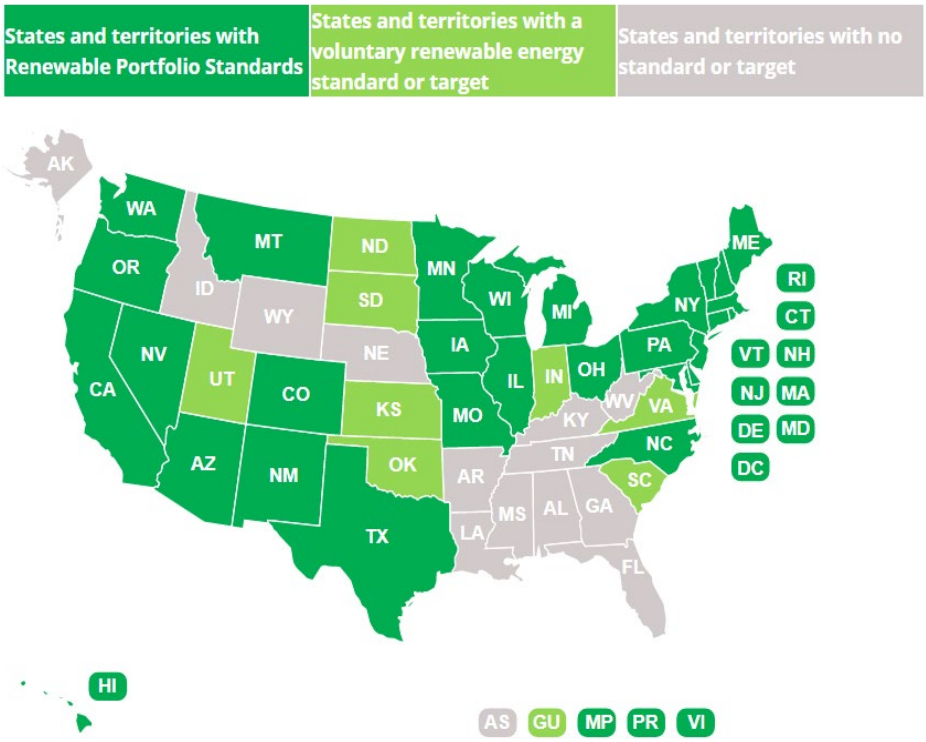
[20] S&C Electric Company, Frost & Sullivan. 2018. State of Commercial & Industrial Power Reliability Report. Technical Report 100-T120. https://www.sandc.com/globalassets/sac-electric/documents/sharepoint/documents---all-documents/technical-paper-100-t120.pdf?dt=637154809843398535

[21] King, Emma. 2019. Power Outages in NOLA: The Problem, Implications, Solutions, and Moving Forward. New Orleans, LA Alliance for Affordable Energy. https://www.all4energy.org/uploads/1/0/5/6/105637723/power_outages_in_nola__the_problem_implications_solutions_and_moving_forward.pdf

[22] Chapa, Sergio. 2017. Microgrids pass crucial test for H-E-B during Harvey in Houston. San Antonio Business Journal. https://www.bizjournals.com/sanantonio/news/2017/08/28/microgrids-pass-crucial-test-for-heb-during-harvey.html

Civic Leadership and Market Signaling

While difficult to measure, the transition to a renewable energy mix will increase the City of New Orleans' profile as a leader in climate action. As seen in the following map from the National Conference of State Legislatures[23], 29 states, Washington, D.C., and three territories have adopted a renewable portfolio standard. Additionally, eight states and one territory have set renewable energy goals. Only two other cities, Columbia, MO in 2004 and Austin, TX in 1999, adopted a Renewable Portfolio Standards without a state level standard. Both Texas and Missouri later adopted state-wide renewable standards[24]. As seen in the following map, no states in the Southeast have an RPS. Through the adoption of a renewable portfolio standard, New Orleans could become the Gulf Coast's leader on sustainability and climate action, differentiating the City from its counterparts in the region.



Source: National Conference of State Legislatures. 2019. State Renewable Portfolio Standards and Goals.

Public education and strategic marketing of a renewable portfolio standards may also make the City more competitive and attractive to new residents, businesses, convention planners, and tourists. Recent consumer surveys indicate a growing public desire for greater sustainability and environmentally responsible actions. In a 2019 survey from Accenture, 72 percent of respondents said they are currently buying more environmentally friendly products than they were five years ago, and

[23] National Conference of State Legislatures. 2020. State Renewable Portfolio Standards and Goals. https://www.ncsl.org/research/energy/renewable-portfolio-standards.aspx

[24] Database of State Incentives for Renewables & Efficiency. 2019. N.C. Clean Energy Technology Center at N.C. State University. https://www.dsireusa.org/

81 percent said they expect to buy more over the next five years.[25] The EPA also notes survey showing that a commitment to sustainability and related efforts can improve employee recruitment and retention.[26]

Resilience

Renewable energy has proven to be more resilient in the face of disaster. Reduced disruption of power and the ability to recover faster when systems are compromised leads to a more secure and dependable system, even when faced with unstable circumstances. New Orleanians are all too familiar with surprise outages caused by seasonal weather events, as well as extended outages resulting from natural disasters. A shift towards renewable energy may help lessen those disturbances.

Reduced Disruption

Wind and solar systems are less susceptible to large-scale failure because the infrastructure is spread over a large geographical area. Thus, a severe weather event in one location is not destined to cut off power throughout an entire region. Because wind and solar systems are composed of many individual turbines and/or arrays, should some of the equipment in the system be damaged, the rest can typically continue to operate.[27]

Faster Recovery

Less disruption during weather events allows for faster recovery when disasters do hit. In 2012, Hurricane Sandy damaged traditional energy systems in New York and New Jersey leaving millions of people without power. However, renewable energy projects weathered Hurricane Sandy with minimal damage or disruption.[28] Sandy's impact on ConEdison Solutions, the renewable energy subsidiary of Consolidated Edison, amounted to "truly, relatively minor damage to a handful of panels," according to Christine Nevin, director of media relations for ConEdison Solutions.[29] In addition, wind turbines near Atlantic City, N.J., were put into hurricane mode during Sandy, escaped unscathed, and were generating 1.5 megawatts of electricity soon after the storm ended.[30]

Climate Change

Reduced emissions and pollution are key ways New Orleans can contribute towards the greater challenges posed by climate change. In the United States, about 29 percent of global warming emissions come from the electricity sector. Most of those emissions come from fossil fuels like coal

[25] Business Wire. 2019. More than Half of Consumers Would Pay More for Sustainable Products Designed to Be Reused or Recycled, Accenture Survey Finds. https://www.businesswire.com/news/home/20190604005649/en
[26] U.S. EPA. 2018. Guide to Purchasing Green Power
https://www.epa.gov/sites/production/files/2018-08/documents/guide-purchasing-green-power-3.pdf
[27] Unger, David J. 2012. Are renewables stormproof? Hurricane Sandy tests solar, wind. The Christian Science Monitor.
https://www.csmonitor.com/Environment/Energy-Voices/2012/1119/Are-renewables-stormproof-Hurricane-Sandy-tests-solar-wind
[28] Ibid.
[29] Ibid.
[30] Ibid.

and natural gas.[31] In New Orleans, 50 percent of greenhouse gases were generated by energy use as of 2014.[32]

In addition to the emissions from nonrenewable sources, the pollution generated by fossil fuels creates a risk for everyone. One Harvard University study estimated the cost associated with the public health impacts of coal to be an estimated $74.6 billion every year.[33] Alternatively, wind, solar, and hydroelectric systems generate electricity with no associated air pollution emissions.[34]

Recognizing these impacts, the New Orleans Climate Action Plan calls for a 50 percent reduction in annual greenhouse gas pollution by 2030, with 100 percent low-carbon electricity and 255 megawatts of local solar. [35] Incorporating renewable and clean energy sources is the only way New Orleans will be able to meet its reduction goals.

IV. Methodology

In order to assess the impacts of the Proposed Resilient and Renewable Portfolio Standard (R-RPS) Rule developed by the Energy Future New Orleans (EFNO) coalition, a model was created to estimate the level of production and source of energy needed to meet local demand and the requirements of the Rule. This estimate, referred to as the EFNO scenario, used the benchmarks and requirements established in the EFNO Proposed R-RPS Rule and resource portfolio data and projections provided in Entergy's 2018 Integrated Resource Plan to model resource portfolio needs. Although the Proposed R-RPS Rule sets benchmarks for energy use, this model was created to capture anticipated demand as Entergy does not publicly disclose figures on energy use. Therefore, the model estimates the number of megawatts generated by each energy source to meet local demand instead of kilowatt or megawatt hours of energy use.

The proposed Rule institutes a mandatory Resilient-Renewable Portfolio Standard with the following benchmarks:

- 20% Renewable (or EE) by 2023
- 25% Renewable (or EE) by 2025
- 40% Renewable (or EE) by 2029
- 55% Renewable (or EE) by 2033
- 100% Renewable (or EE) by 2040

In addition to the EFNO scenario, two additional scenarios were modeled to demonstrate the impacts of each potential path forward. In order to assess the EFNO scenario against the status quo, a model was created to estimate the addition of renewable and resilient energy sources to the existing Entergy

[31] Energy Information Agency (EIA). 2017. How much of the U.S. carbon dioxide emissions are associated with electricity generation? https://www.eia.gov/tools/faqs/faq.cfm?id=77&t=11

[32] City of New Orleans. 2017. Climate Action for a Resilient New Orleans. Office of Resilience and Sustainability. https://www.nola.gov/nola/media/Climate-Action/Climate-Action-for-a-Resilient-New-Orleans.pdf

[33] Epstein, P.R.,J. J. Buonocore, K. Eckerle, M. Hendryx, B. M. Stout III, R. Heinberg, R. W. Clapp, B. May, N. L. Reinhart, M. M. Ahern, S. K. Doshi, and L. Glustrom. 2011. Full cost accounting for the life cycle of coal in "Ecological Economics Reviews." Ecological Economics Review, Annals of the New York Academy of Science. Volume 1219.

[34] Union of Concerned Scientists. 2017. Benefits of Renewable Energy Use. Union of Concerned Scientists. Available at: https://www.ucsusa.org/resources/benefits-renewable-energy-use

[35] City of New Orleans. 2017. Climate Action for a Resilient New Orleans. Office of Resilience and Sustainability. https://www.nola.gov/nola/media/Climate-Action/Climate-Action-for-a-Resilient-New-Orleans.pdf

resource portfolio. Using the current resource portfolio in Entergy's 2018 Integrated Resource Plan Report as a baseline, the model takes into consideration planned decommissions of resources and the addition of greater renewable resources to the portfolio. This model is referred to as the Entergy New Orleans scenario.

A model was also developed to examine the impacts of Alternative 2: Renewable and Clean Portfolio Standard as put forth by the Advisors' Report on Renewable Portfolio Standards for the Council of the City of New Orleans. This estimate, referred to as the Alternative 2 scenario, used benchmarks from the Advisors' Report on Renewable Portfolio Standards and data provided in Entergy's 2018 Integrated Resource Plan to model future needs. Once again, Alternative 2 set benchmarks for energy use, however demand is used in the model due to data limitations.

The Advisors' Alternative 2 requires a mandatory renewable and clean portfolio standard (including nuclear) that meets the following benchmark:

- 62% compliance, (25% RECs allowed) by 2021
- 80% compliance, (20% RECs allowed) by 2030
- 100% compliance (20% RECs allowed) by 2040
- 100% compliance (0% RECs allowed) by 2050

Key Assumptions

Utilizing the information available at the time of this report and given the uncertainties of future events and technologies, the following assumptions were used to create the three scenarios within this report:

- The model measures megawatts of generation as opposed to megawatt hours of use due to the lack of use data provided by Entergy.
- The models use the following years to capture changes in demand: 2023, 2025, 2029, 2033, and 2040. These years represent the major benchmarks for compliance in the Proposed Rule developed by the Energy Future New Orleans coalition.
- Energy demand increases 0.07 percent annually based on the Annual Coincident Peaks Megawatt (MW) Forecast in Entergy's 2018 IRP.
- Energy produced by facilities currently in the Entergy portfolio that go offline will be replaced by renewable or resilient energy. Facilities and timeline for retirement are as follows:
    - White Bluff Coal Facility (25 MW) – Offline in 2028
    - Independence Coal Facility (7 MW) – Offline in 2030
    - Union PB1 Natural Gas Facility (495 MW) – Offline in 2033
- Entergy will meet the minimum requirements for renewable or resilient energy outlined in the Proposed RPS Rule put forth by the EFNO coalition and Alternative 2 from the Advisors' report.

Economic Impact Analysis

The economic impact analysis will evaluate the economic benefits associated with the construction and operation of solar energy facilities located in Orleans Parish. The construction associated with each benchmark is considered a one-time benefit to the area. Construction costs were estimated

based on total capital cost figures provided by Lazard, a financial advisory and asset management firm.[36]

Operation of the facilities will provide ongoing benefits to Orleans Parish. For the purposes of this analysis, ongoing operations are represented by fixed operations and maintenance estimates, which were also based on figures by Lazard.[37] These figures represent a portion of the ongoing benefits associated with the local development of the solar industry.

Economic impacts were assessed using IMPLAN, a widely used and respected modeling tool. IMPLAN provides direct, indirect, and induced economic impacts based on a set of multipliers established for Orleans Parish. The economic impact assessment was run in 2020 dollars and is not adjusted over time.

Direct impacts result from economic activity that is happening in association with construction or ongoing operations. IMPLAN's impacts represent the expenditures associated with building and operating solar facilities within the Parish.

Indirect impacts reflect the economic activity that is enabled by direct spending. Local firms providing goods and services to the solar facilities will spend on employment, products, and other services to meet the needs of the local solar industry.

Induced impacts result from direct impacts on labor income and represent the impact of household spending on the local economy due.

The economic impact analysis will provide the following outputs:

- Employment—or number of total jobs supported. This includes full and part-time workers.
- Labor Income (Earnings/Salaries) in IMPLAN consists of two parts. First, the total payroll cost of the employee paid by the employer: wage and salary, all benefits, and employer-paid payroll taxes (e.g. employer side of social security, unemployment taxes, etc.). Second, proprietor income consists of payments received by self-employed individuals and unincorporated business owners.
- Value Added is comprised of Labor Income, Indirect Business Taxes, and Other Property Type Income. It demonstrates an industry's value of production over the cost of purchasing the good and services required to make its products. Value Added is often referred to as Gross Regional Product (GRP). Value Added = Labor Income + Indirect Business Taxes + Other Property Type Income.
- Output (Total Spending) represents the value of industry production. In IMPLAN these are annual production estimates for the year of the data set and are in producer prices. For manufacturers this will be sales plus/minus change in inventory. For service sectors production = sales. For retail and wholesale trade, output = gross margin and not gross sales. Output = Intermediate Inputs + Value Added.

In addition to the model assumptions described previously, the economic impact analysis is based on the following assumptions:

- The incremental change in megawatts from benchmark to benchmark was used to establish investment amount.

[36] Lazard. 2019. Lazard's Levelized Cost of Energy Analysis, Version 13.0. https://www.lazard.com/media/451086/lazards-levelized-cost-of-energy-version-130-vf.pdf
[37] Ibid.

- Construction costs represent investment over one year.
- Estimated capital and fixed operations and maintenance costs are in 2020 dollars.
- Each event run within scenarios represents 2020 dollars.

Environmental Impact Analysis

The environmental impact analysis estimates the emissions displaced as solar energy replaces other sources of energy production. The AVoided Emissions and geneRation Tool (AVERT) evaluates how energy efficiency (EE) and renewable energy (RE) policies and programs displace particulate matter (PM2.5), nitrogen oxides (NOX), sulfur dioxide (SO2), and carbon dioxide (CO2) emissions from electric power plants at a county, state, or regional level.[38] The online version of the AVERT model was utilized to estimate the amount of displaced emissions for each scenario based on the projected megawatts of solar in each benchmark year.

The model has 10 regions which re-aggregate based on EPA's eGrid subregions. New Orleans falls into the Southeast Region. The model has five types of inputs under energy efficiency and renewable energy that can be used to measure avoided emissions:

- Energy Efficiency
    - Reductions spread throughout the year
    - Percentage reductions in some or all hours
- Renewable Energy
    - Wind
    - Utility-scale solar photovoltaic
    - Distributed (rooftop) solar photovoltaic

The renewable energy models, including utility-scale solar photovoltaic and distributed (rooftop) solar photovoltaic, were used to estimate displaced emissions. For each scenario the estimated megawatts of solar by type was run through the model, resulting in estimates of displace particulate matter (PM2.5), nitrogen oxides (NOX), sulfur dioxide (SO2), and carbon dioxide (CO2) emissions displaced by the projected solar energy production at each benchmark year. The results represent impacts across Louisiana as the model was not available for Orleans Parish.

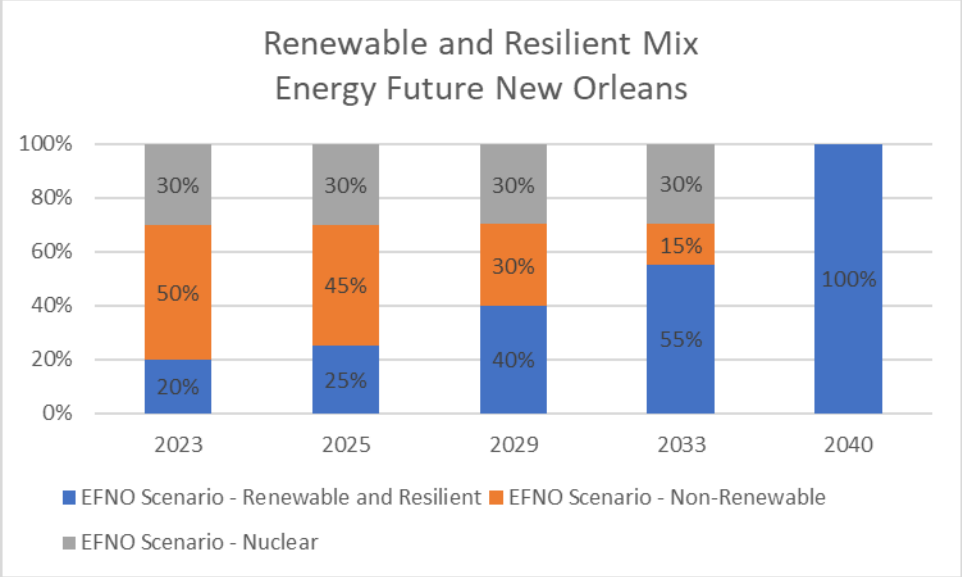
V. Anticipated R-RPS Benefits and Impacts

Model

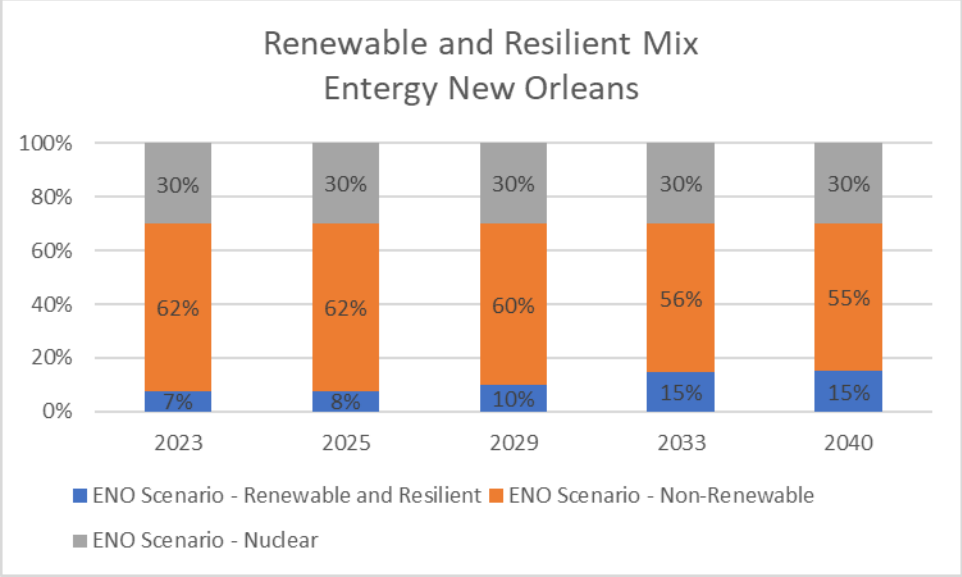
An analysis of the three scenarios, Energy Future New Orleans), (EFNO Entergy New Orleans (ENO), and Advisors' Alternative 2 (Alt. 2) demonstrates a move towards increased renewable energy at different rates.

[38] United States Environmental Protection Agency. 2020. AVERT Model. https://www.epa.gov/statelocalenergy/avert-web-edition

The EFNO scenario represents requirements to increase the use of solar power in Orleans Parish by requiring rooftop, community, and utility solar as a central component to meeting requirements.[39] It also has the most aggressive timeline of the three to reach 100 percent renewable energy by 2040.

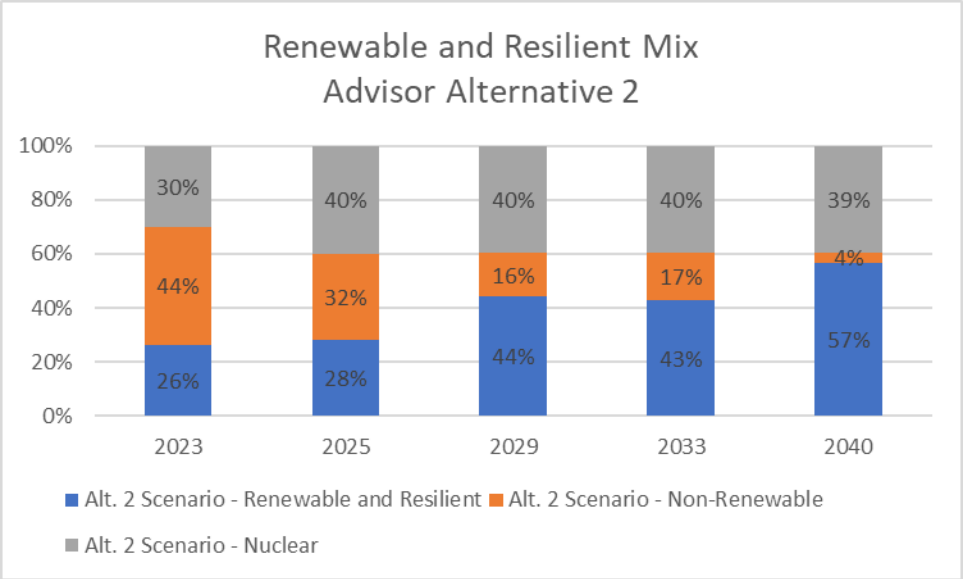


ENO's scenario was created using data points from Entergy's 2018 Integrated Resource Plan. This scenario assumes a modest increase in Entergy's use of solar power based on the retirement of traditional energy sources identified in the 2018 IRP. [40]



[39] Energy Future New Orleans. 2019. Resilient and Renewable Portfolio Standard (R-RPS) Draft Rule Proposal.
[40] Entergy New Orleans. 2019. 2018 Integrated Resource Plan.
https://www.entergy-neworleans.com/irp/2018_irp/

The Alt. 2 scenario requires Entergy of New Orleans to use a large percentage of renewable or zero-emissions energy to meet local demand immediately. However, the requirements for these targets can be met by a number of sources classified as a zero-emissions resource. Examples include renewable resources, nuclear, and fossil-fuel generators where 100 percent of carbon emissions are captured through CCUS.[41]



The following table provides a summary of each scenario and estimated capacity for key benchmarks from 2023 to 2040 by megawatt (MW).

Estimated Capacity by Scenario and Renewable or Resilient

	2023		2025		2029		2033		2040	
	MW	%	MW	%	MW	%	MW	%	MW	%
Entergy – Est. Capacity	1,403	100%	1,405	100%	1,409	100%	1,413	100%	1,420	100%
Energy Future New Orleans Scenario										
Renewable and Resilient	281	20%	351	25%	564	40%	777	55%	1,420	100%
Nuclear	422	30%	422	30%	422	30%	422	30%	-	0%
Non-Renewable	700	50%	632	45%	423	30%	214	15%	-	0%
Entergy New Orleans Scenario										
Renewable and Resilient	105	7%	107	8%	136	10%	205	15%	212	15%
Nuclear	422	30%	422	30%	422	30%	422	30%	422	30%
Non-Renewable	876	62%	876	62%	851	60%	786	56%	786	55%
Advisors' Alternative 2 Scenario										
Renewable and Resilient	370	26%	397	28%	621	44%	606	43%	804	57%
Nuclear	422	30%	560	40%	560	40%	560	40%	560	39%
Non-Renewable	610	44%	448	32%	228	16%	247	17%	56	4%

[41] Utility Advisors to the Council of the City of New Orleans. 2019. Advisors Report on Renewable Portfolio Standards.

A further breakdown of the estimated capacity provides additional detail on the assumptions of the model by resilient and renewable energy type. Demand side management, energy efficiency, and battery storage were all considered in this model as they represent resources to meet the requirements of EFNO's proposed rule and the Advisors' Alternative 2 and are considered resilient energy sources.

Estimated Capacity by Scenario and Energy Type

	2023	2025	2029	2033	2040
	MW	MW	MW	MW	MW
Entergy - Estimated Capacity	1,403	1,405	1,409	1,413	1,420
Energy Future New Orleans Scenario					
Solar	126	149	214	295	540
Rooftop	7	18	28	39	71
Community	7	18	28	39	71
Utility - Orleans Parish	42	44	79	109	199
Utility - Outside of Orleans Parish	70	70	79	109	199
Demand Side Management and Energy Efficiency	14	35	56	78	142
Battery Storage	7	18	28	39	71
Entergy New Orleans Scenario					
Solar	105	107	136	205	212
Rooftop	8	9	12	26	26
Community	7	8	12	26	26
Utility - Orleans Parish	20	20	31	51	54
Utility - Outside of Orleans Parish	70	70	81	102	106
Demand Side Management and Energy Efficiency	-	-	-	-	-
Battery Storage	-	-	-	-	-
Advisors' Alternative 2 Scenario					
Solar	100	100	165	205	270
Rooftop	5	5	15	26	30
Community	5	5	15	26	30
Utility - Orleans Parish	20	20	35	51	60
Utility - Outside of Orleans Parish	70	70	100	102	150
Demand Side Management and Energy Efficiency	22	26	30	32	34
Battery Storage	-	-	-	-	-

Economic Impact Analysis

The economic impact analysis provides an assessment of the potential economic impacts of the investment in solar energy for each scenario. The purpose of this analysis is to compare the economic impacts that each scenario would have on Orleans Parish. Therefore, solar energy was singled out as the key local investment with the greatest impact on the local economy. Economic impacts include employment, labor income, value added, output, and state and local taxes as defined by the IMPLAN model. The results of this analysis provide a point of comparison between scenarios but are not all inclusive of every economic impact that would result from local investment in renewable energy.

Construction Cost Estimates

Construction cost estimates were established using data from Lazard's Levelized Cost of Energy Analysis, Version 13.0 and represent the cost of additional megawatts needed to meet demand for each of the benchmark years.[42]

Construction cost estimates were then broken out by investments within or outside of Orleans Parish to measure the local economic impact of each scenario. Of all the scenarios, the EFNO scenario has the largest estimated local construction costs of $478.3 million.

Projected Construction Solar ($millions)

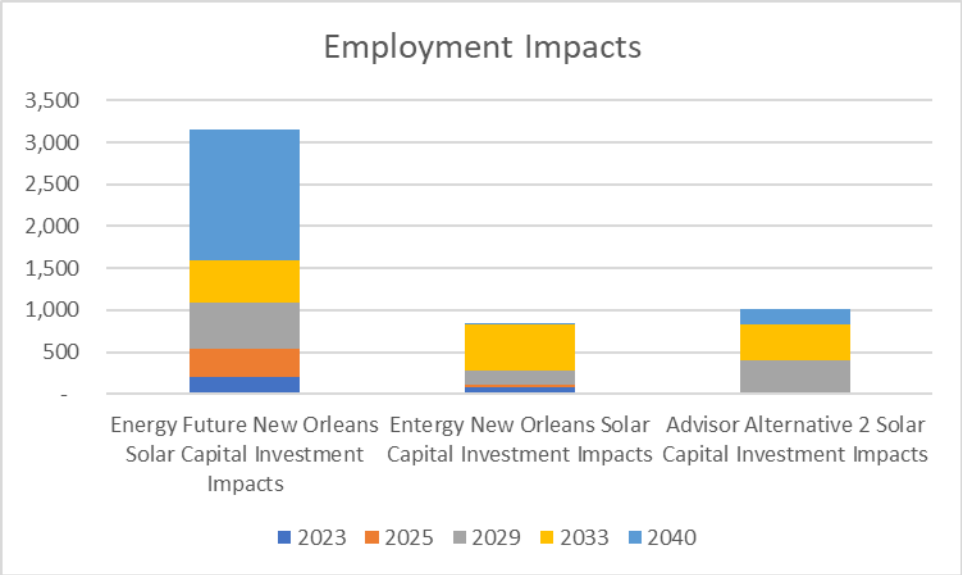
	Energy Future New Orleans Scenario		**Entergy New Orleans Scenario**		**Advisors' Alternative 2 Scenario**	
Year	Orleans Parish	Outside Orleans Parish	Orleans Parish	Outside Orleans Parish	Orleans Parish	Outside Orleans Parish
2023	$31.27	$0.00	$11.69	$0.00	$0.00	$0.00
2025	$49.70	$0.00	$4.54	$0.00	$0.00	$0.00
2029	$83.11	$8.90	$26.54	$11.00	$60.38	$30.00
2033	$78.35	$29.90	$83.53	$21.00	$65.91	$2.00
2040	$235.87	$90.01	$3.00	$4.00	$27.15	$48.00
Total	$478.30	$128.81	$129.29	$36.00	$153.44	$80.00

Construction Impacts

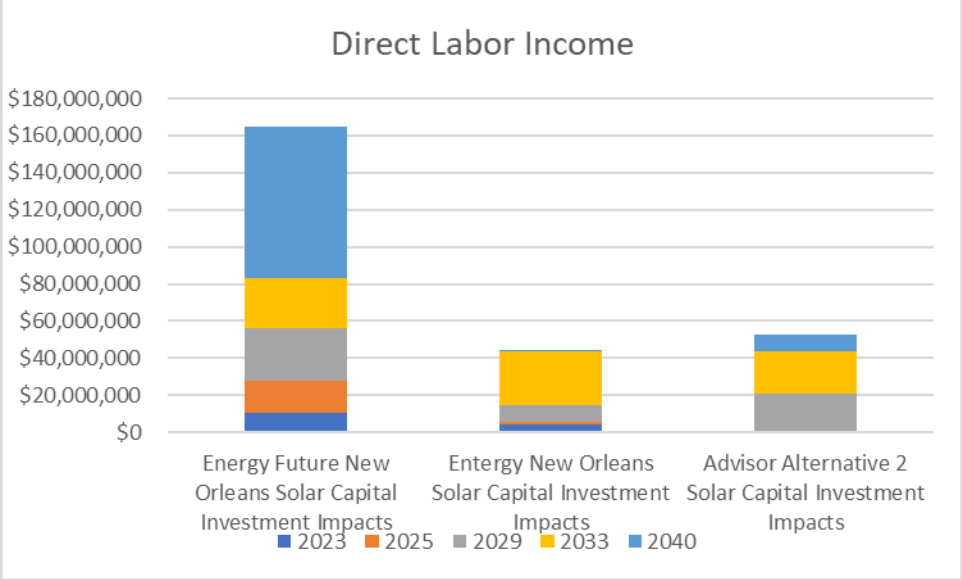
Employment impacts provide an estimate of the number of jobs that would be supported by construction spending in Orleans Parish. Employment figures represent a combination of full and part time workers needed to complete the project.

[42] Lazard. 2019. Lazard's Levelized Cost of Energy Analysis, Version 13.0. https://www.lazard.com/media/451086/lazards-levelized-cost-of-energy-version-130-vf.pdf

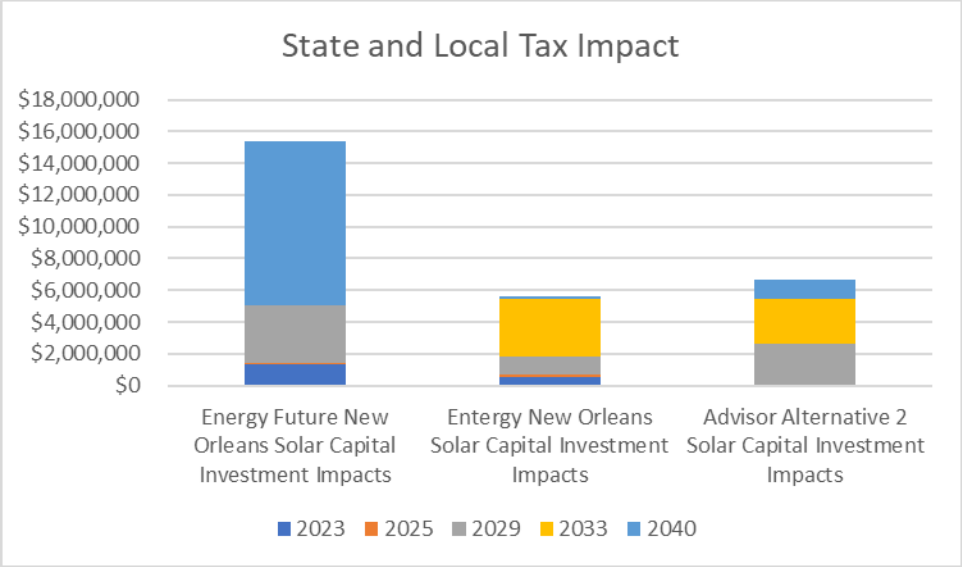
Of the three scenarios, the largest employment impacts are in the EFNO scenario. Based on an estimated construction budget of $478.3 million from 2023 to 2040, IMPLAN estimates construction will support 3,157 jobs. Construction for the ENO scenario is projected to support 854 jobs and Alt. 2 is projected to support 1,013 jobs during the same period. These jobs represent one time impacts on Orleans Parish. While construction is taking place locally, jobs may be filled by the regional labor market.



The 3,157 jobs supported in the EFNO scenario will generate an estimated $164.7 million in direct labor income from 2023 to 2040. Estimates of direct labor income for the ENO scenario total $44.5 million and the Alt. 2 scenario is estimated at $52.8 million through the course of the model period.



Construction activity will also generate taxes for the state and local government. The following figures represent both state and local taxes as IMPLAN does not present broken out results. Over $15.3 million in taxes are associated with the construction of solar energy in Orleans Parish under the EFNO scenario. The IMPLAN model projects $5.6 in taxes as a result of construction in the ENO scenario and $6.7 million in the Alt. 2 scenario.



Construction economic impacts based on the EFNO scenario will consistently ramp up over time. From 2023 through 2029, solar construction is estimated to support 1,083 jobs and $56.5 million in direct labor income. In comparison, the ENO scenario is estimated to support 282 jobs and $14.7 million in direct labor income and the Alt. 2 scenario is estimated to support 399 jobs and $20.8 million in direct labor income during the same period.

In total, the construction impacts based on the EFNO scenario support 3,157 jobs and $164.7 million in direct labor income.

In addition to jobs and direct labor income, IMPLAN also calculates the direct value added and direct output for construction costs. Over the course of the entire period, direct spending of construction costs ($478.3 million) is estimated to generate $237.4 million in direct value added and $478.3 million in direct output.

Energy Future New Orleans Solar Construction Impacts

Year	Direct Employment	Direct Labor Income	Direct Value Added	Direct Output	State and Local Tax
2023	206.4	$10,764,425	$15,522,554	$31,269,859	$1,358,564
2025	328.1	$17,108,882	$24,671,410	$49,700,036	$48,307
2029	548.7	$28,610,892	$41,257,579	$83,112,524	$3,610,943
2033	517.2	$26,971,225	$38,893,141	$78,349,414	$76,154
2040	1,557.0	$81,196,235	$117,086,880	$235,869,054	$10,247,667
Total	3,157.0	$164,651,659	$237,431,564	$478,300,887	$15,341,635

Construction economic impacts based on the ENO scenario will primarily take place in the year 2033. Impacts from that year alone comprise 65 percent of the total impacts across the time period and support 854 direct jobs, $44.5 million in direct labor income.

In addition to jobs and direct labor income, IMPLAN also calculates the direct value added and direct output for construction costs. Over the course of the entire period, direct spending of construction costs ($129.3million) is estimated to generate $64.2 million in direct value added and $129.3 million in direct output.

Entergy New Orleans Solar Construction Impacts

Year	Direct Employment	Direct Labor Income	Direct Value Added	Direct Output	State and Local Tax
2023	77.2	$4,023,338	$5,801,749	$11,687,500	$507,780
2025	30.0	$1,562,002	$2,252,444	$4,537,500	$197,138
2029	175.2	$9,135,345	$13,173,382	$26,537,501	$1,152,959
2033	551.4	$28,752,884	$41,462,335	$83,525,002	$3,628,858
2040	19.8	$1,032,729	$1,489,219	$3,000,000	$130,339
Total	853.6	$44,506,298	$64,179,129	$129,287,503	$5,617,074

Construction economic impacts based on the Alt. 2 scenario will also ramp up over time, supporting 1,013 jobs and $52.8 million in direct labor spending throughout the period.

In addition to jobs and direct labor income, IMPLAN also calculates the direct value added and direct output for construction costs. Over the course of the entire period, direct spending of construction costs ($153.4 million) is estimated to generate $76.2 million in direct value added and $153.4 million in direct output.

Advisors' Alternative 2 Solar Construction Impacts

Year	Direct Employment	Direct Labor Income	Direct Value Added	Direct Output	State and Local Tax
2023	0.0	$0	$0	$0	$0
2025	0.0	$0	$0	$0	$0
2029	398.6	$20,783,662	$29,970,530	$60,375,001	$2,623,074
2033	435.1	$22,689,907	$32,719,380	$65,912,501	$2,863,658
2040	179.2	$9,346,193	$13,477,431	$27,150,001	$1,179,570
Total	1,012.9	$52,819,762	$76,167,341	$153,437,503	$6,666,302

Ongoing Operations Estimates

Ongoing operations estimates were established using jobs data provided by the Solar Foundation's 2018 National Solar Jobs Census and represent the number of jobs per megawatt of solar needed to meet demand for each of the benchmark years.[43] The report provides the number of installation jobs per megawatt of solar and a breakdown of job types throughout the industry. This data was used to estimate the number of both total jobs and operations and maintenance jobs per megawatt of solar by type. The following tables provide the figures used to estimate the number of operations and maintenance jobs.

Solar Employment by Sector

Job Type	Percent
Installation and Project Development	64%
Wholesale Trade & Distribution	12%
Manufacturing	14%
Operations and Maintenance	5%
All Others	5%
Total	100%

Source: The Solar Foundation

Installation and Project Development Jobs per MW Installed

Solar Type	Jobs
Industry Total	14
Residential	38.7
Non-residential	21.9
Utility-scale	3.3

Source: The Solar Foundation

Jobs per MW Installed

Solar Type	Installation and Project Development	Total	Operations and Maintenance
Industry Total	14	21.9	1.1
Residential	38.7	60.5	3.0
Non-residential	21.9	34.2	1.7
Utility-scale	3.3	5.2	0.3

Operations and maintenance job estimates were calculated by multiplying the estimated megawatt capacity for each type of solar and the jobs figures outlined above. The estimates are presented within or outside of Orleans Parish to measure the local economic impact of each scenario and represent the

[43] The Solar Foundation. 2018. National Solar Jobs Census 2018. https://www.seia.org/research-resources/solar-jobs-census-2018

first year after construction of additional solar capacity. The figures take into consideration estimated jobs for every megawatt of solar in the corresponding year.

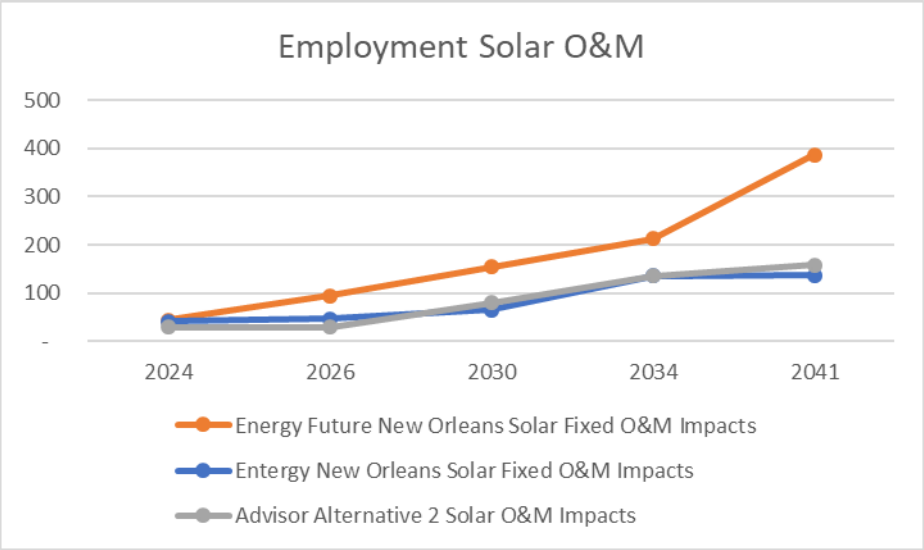
On an annual basis, the EFNO scenario is projected to have the greatest number of operations and maintenance jobs across the scenarios. By 2041 solar operations and maintenance jobs are projected to equal 438 in the EFNO scenario, 164 in the ENO scenario, and 197 in the Alt. 2 scenario.

Projected First Year Solar O&M Jobs

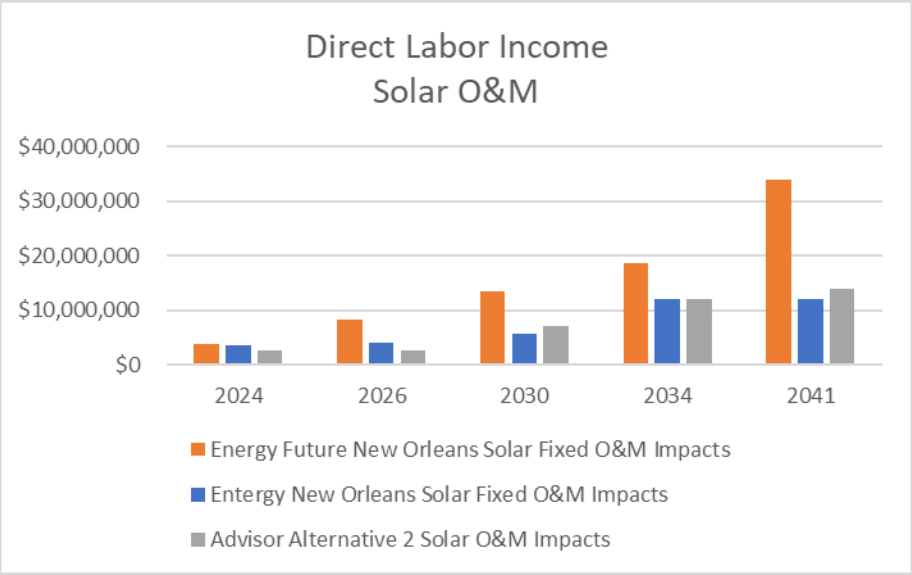
	Energy Future New Orleans Scenario		Entergy New Orleans Scenario		Advisors' Alternative 2 Scenario	
Year	Orleans Parish	Outside Orleans Parish	Orleans Parish	Outside Orleans Parish	Orleans Parish	Outside Orleans Parish
2024	44	18	41	18	29	18
2026	94	18	46	18	29	18
2030	154	20	65	21	80	26
2034	212	28	136	26	136	26
2041	387	51	137	27	158	39

Ongoing Operations Impacts

The estimated number of employees supported by ongoing operations within Orleans Parish ranges from 387 in the EFNO scenario to 137 in the ENO scenario and 158 in the Alt. 2 scenario by 2041.



Direct labor from ongoing operations will peak at the end of the period for each of the scenarios. By 2041, IMPLAN estimates direct labor income will total$34 million for the EFNO scenario, $12 million for the ENO scenario, and $13.9 million for the Alt. 2 scenario.



In addition to jobs and direct labor income, IMPLAN also calculates the direct value added and direct output for construction costs. By 2041, direct employment is estimated to generate $67.7 million in direct value added and $122.0 million in direct output.

Energy Future New Orleans Solar O&M Impacts

Year	Direct Employment	Direct Labor Income	Direct Value Added	Direct Output
2024	44	$3,866,552	$7,696,552	$13,873,410
2026	94	$8,260,360	$16,442,635	$29,638,651
2030	154	$13,532,929	$26,937,932	$48,556,933
2034	212	$18,629,748	$37,083,389	$66,844,614
2041	387	$34,008,077	$67,694,675	$122,022,947

In addition to jobs and direct labor income, IMPLAN also calculates the direct value added and direct output for construction costs. By 2041, direct employment of 137 is estimated to generate $24.0 million in direct value added and $43.2 million in direct output.

Entergy New Orleans Solar O&M Impacts

Year	Direct Employment	Direct Labor Income	Direct Value Added	Direct Output
2024	41	$3,602,923	$7,171,788	$12,927,496
2026	46	$4,042,304	$8,046,396	$14,504,020
2030	65	$5,711,951	$11,369,907	$20,494,810
2034	136	$11,951,160	$23,789,345	$42,881,453
2041	137	$12,039,035	$23,964,264	$43,196,753

In addition to jobs and direct labor income, IMPLAN also calculates the direct value added and direct output for construction costs. By 2041, direct employment is estimated to generate $27.6 million in direct value added and $49.8 million in direct output.

Advisors' Alternative 2 Solar O&M Impacts

Year	Direct Employment	Direct Labor Income	Direct Value Added	Direct Output
2024	29	$2,548,409	$5,072,728	$9,143,839
2026	29	$2,548,409	$5,072,728	$9,143,839
2030	80	$7,030,094	$13,993,732	$25,224,383
2034	136	$11,951,160	$23,789,345	$42,881,453
2041	158	$13,884,434	$27,637,619	$49,818,153

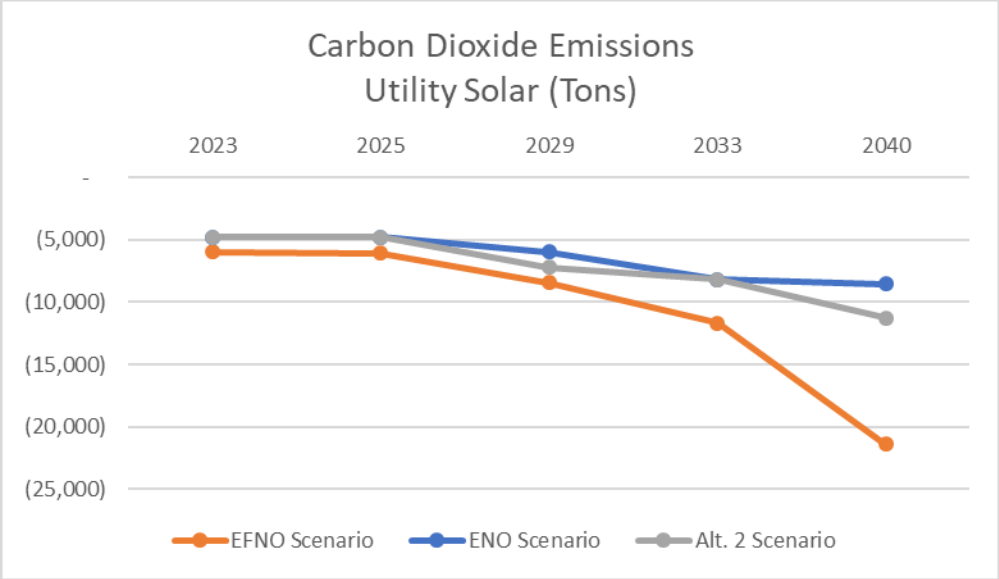
Environmental Impact Analysis

Addressing climate change is a priority for the City of New Orleans. The introduction of a renewable and resilient portfolio standard has the potential to reduce pollution caused by air pollutants and greenhouse gases. The AVERT model is a tool provided by the United States Environmental Protection Agency that estimates the potential displacement of emissions associated with energy production. Inputs from each scenario were run through AVERT to demonstrate the potential impacts over time. This analysis measures the potential impacts of rooftop and utility solar on the state of Louisiana.

Utility Solar

The ENFO scenario has the largest impact on emissions from 2023 to 2040. During this period the EFNO scenario would offset carbon emissions by 53,520 tons in comparison to 32,239 tons for the ENO scenario and 36,178 tons for the Alt. 2 scenario through the development of utility solar.

The following graph represents the carbon dioxide emission reductions for utility solar for each scenario. Carbon emissions are used as a snapshot to demonstrate the trends for all emissions as captured in the table below.



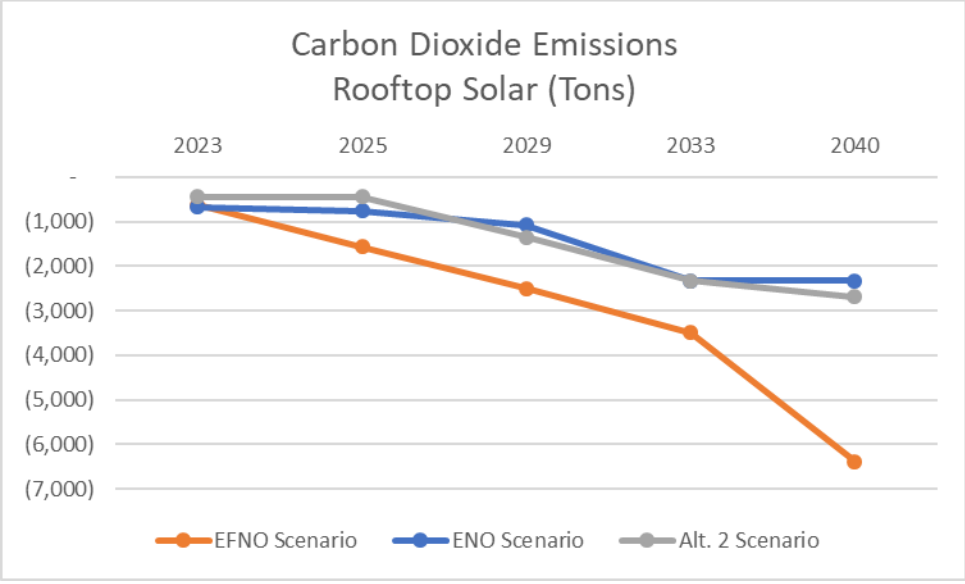
Utility Scale Solar Emissions Reductions

	2023	2025	2029	2033	2040
Sulfur Dioxide - SO2 (lbs.)					
EFNO Scenario	(12,246)	(12,467)	(17,351)	(24,160)	(44,641)
ENO Scenario	(9,811)	(9,811)	(12,246)	(16,794)	(17,574)
Alt. 2 Scenario	(9,811)	(9,811)	(14,795)	(16,794)	(23,248)
Nitrogen Oxides - NOX (lbs.)					
EFNO Scenario	(17,658)	(17,974)	(24,938)	(34,491)	(62,887)
ENO Scenario	(14,178)	(14,178)	(17,658)	(24,146)	(25,255)
Alt. 2 Scenario	(14,178)	(14,178)	(21,297)	(24,146)	(33,219)
Carbon Dioxide - CO2 (tons)					
EFNO Scenario	(5,965)	(6,072)	(8,432)	(11,678)	(21,373)
ENO Scenario	(4,786)	(4,786)	(5,965)	(8,163)	(8,539)
Alt. 2 Scenario	(4,786)	(4,786)	(7,198)	(8,163)	(11,245)
Particulate Matter with a Diameter of 2.5 Microns or Less - PM2.5 (lbs.)					
EFNO Scenario	(975)	(992)	(1,378)	(1,907)	(3,494)
ENO Scenario	(782)	(782)	(975)	(1,334)	(1,395)
Alt. 2 Scenario	(782)	(782)	(1,176)	(1,334)	(1,836)

Rooftop Solar

The ENFO scenario also has the largest potential impact on carbon dioxide emissions through the development of rooftop solar. From 2023 to 2040, the ENFO scenario is projected to offset 14,588 tons of carbon dioxide emissions. During this same period, the ENO scenario is projected to offset 7,161 carbon dioxide emissions and 7,251 in the Alt. 2 scenario.

The following graph represents the carbon dioxide emission reductions for rooftop solar for each scenario. Carbon emissions are used as a snapshot to demonstrate the trends for all emissions as captured in the table below.



Rooftop Solar Emissions Reductions

	2023	2025	2029	2033	2040
Sulfur Dioxide - SO2 (lbs.)					
EFNO Scenario	(1,252)	(3,119)	(5,004)	(6,999)	(12,882)
ENO Scenario	(1,341)	(1,519)	(2,139)	(4,643)	(4,643)
Alt. 2 Scenario	(895)	(895)	(2,673)	(4,643)	(5,365)
Nitrogen Oxides - NOX (lbs.)					
EFNO Scenario	(1,895)	(4,738)	(7,583)	(10,566)	(19,280)
ENO Scenario	(2,030)	(2,302)	(3,250)	(7,041)	(7,041)
Alt. 2 Scenario	(1,353)	(1,353)	(4,062)	(7,041)	(8,124)
Carbon Dioxide - CO2 (tons)					
EFNO Scenario	(627)	(1,566)	(2,506)	(3,497)	(6,392)
ENO Scenario	(672)	(761)	(1,074)	(2,327)	(2,327)
Alt. 2 Scenario	(448)	(448)	(1,342)	(2,327)	(2,686)
Particulate Matter with a Diameter of 2.5 Microns or Less - PM2.5 (lbs.)					
EFNO Scenario	(103)	(257)	(411)	(573)	(1,047)
ENO Scenario	(110)	(125)	(176)	(381)	(381)
Alt. 2 Scenario	(73)	(73)	(220)	(381)	(440)

VI. Summary and Conclusions

Each scenario put forth in this analysis would increase the use of resilient and renewable energy within the City of New Orleans. However, the scenario informed by EFNO's proposed Rule for the R-RPS would have the greatest positive impacts on the City of New Orleans. The EFNO scenario provides the City of New Orleans with a path towards cleaner energy at a faster rate than the ENO or Alt. 2 scenario. Additionally, the EFNO scenario has the greatest the potential for local clean energy growth, including capital investment and jobs, within Orleans Parish.

The EFNO scenario is the most aggressive scenario to increase the amount of truly renewable and resilient energy in the City of New Orleans. Removing nuclear energy from the renewable and resilient energy category, the Alt. 2 scenario requires a greater percentage of other renewable and resilient energy early in the timeline, However, the ENFO scenario reaches 100 percent by 2040.

The EFNO scenario has the potential to drive the greatest investment in new local renewable energy. The requirements of the EFNO proposed Rule incentivize a larger investment in local solar power over time. The EFNO scenario supports the development of over 322 percent more local solar than the ENO scenario and 284 percent more local solar than the Alt. 2 scenario. By 2040, the EFNO scenario projects 341 MW of local solar, compared to only 106 MW in the ENO scenario and 120 MW in the Alt. 2 scenario.

The EFNO scenario also generates the highest investment in local solar construction, supporting over three times more well-paying jobs than the other scenarios. IMPLAN estimates a total of 3,157 jobs will be supported throughout the construction of local solar in the EFNO scenario with $164.7 million in direct labor income. By comparison, ENO is estimated to support 854 jobs and $44.5 million in direct labor income. Alt. 2 is projected to support 1,013 jobs and $52.8 million in direct labor income. The estimated direct wages are approximately $52,000 per unit of employment.

Additionally, the EFNO scenario is projected to support the most operations and maintenance jobs within Orleans Parish of the scenarios. In comparison to the other scenarios, the EFNO scenario supports approximately twice as many jobs (387) as the other scenarios (ENO 137 and Alt.2 158) by 2041.

The EFNO scenario has the potential to yield the greatest reduction in emissions from 2023 to 2040. During this period the EFNO scenario would reduce carbon emissions by 53,520 tons in comparison to 32,239 tons for the ENO scenario and 36,178 tons for the Alt. 2 scenario through the development of utility solar.

VII. Disclaimer

Certain information included in this report contains forward-looking estimates, projections and/or statements. GCR Inc. has based these projections, estimates and/or statements on our current expectations about future events. These forward-looking items include statements that reflect our existing beliefs and knowledge regarding the operating environment, existing trends, existing plans, objectives, goals, expectations, anticipations, results of operations, future performance and business plans.

Further, statements that include the words "may," "could," "should," "would," "believe," "expect," "anticipate," "estimate," "intend," "plan," “project,” or other words or expressions of similar meaning have been utilized. These statements reflect our judgment on the date they are made and we undertake no duty to update such statements in the future.

Although we believe that the expectations in these reports are reasonable, any or all of the estimates or projections in this report may prove to be incorrect. To the extent possible, we have attempted to verify and confirm estimates and assumptions used in this analysis. However, some assumptions inevitably will not materialize as a result of inaccurate assumptions or as a consequence of known or unknown risks and uncertainties and unanticipated events and circumstances, which may occur. Consequently, actual results achieved during the period covered by our analysis will vary from our estimates and the variations may be material. As such, GCR Inc. accepts no liability in relation to the estimates provided herein.