

Nanomotors

NM-1

Solar Powered Car

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1. Executive Summary

1.1. Summary of Situation Analysis

- 1.1.1. The market for solar powered vehicles is relatively untapped. However, the market for vehicles in general is extremely competitive. We at Nanomotors hope to fill the gaps that other solar powered vehicle manufacturers are creating. The NM-1 Solar Powered Vehicle from Nanomotors plans to be the first mass produced solar powered vehicle created with 100% sustainable energy. Along with that, the car will be made of sustainable and recycled material wherever possible. We plan to target middle class Americans, ages 25-54, with some level of higher education. Our main goal is to set ourselves apart from the competition and build a brand that prides itself on sustainability. The NM-1's biggest strength is in the solar power itself. The biggest weakness of the NM-1 is its heavy load capacity. We want to make a vehicle that fits the lifestyle of commuters and families. Another weakness is our brand itself. We are entering a very competitive market as a new company, so we might struggle with brand recognition and loyalty. Nanomotors hopes to capture the interest of our target market and increase their awareness of our commitment to a future of sustainable mobility.

1.2. Summary of Marketing Objectives

- 1.2.1. The primary objective that will guide our marketing campaign is: Increase positive sentiment towards electric vehicles, more specifically the NM-1 Solar Powered Vehicle from Nanomotors, in ages 25-54, by 30% by January 2024. Another objective we have is to increase awareness of the benefits provided by a solar powered vehicle when it comes to fossil fuel consumption and sustainability, in ages 25-54, by 30% by January 2024. We feel that both of these objectives fill the organizational goal of being the first purely solar powered vehicle on the market, and being the first to mass produce such vehicles using 100% sustainable energy.

1.3. Summary of Marketing Strategies

- 1.3.1. The main points of our marketing strategies is to position our product in the consumers mind so that our benefits offered resonate with them the most. As for our differentiation from other solar powered vehicles we are creating your traditional car that is extremely environmentally friendly. Our price differentiation is higher than our competitors, but it is justifiable due to the better qualities our product offers. Lastly, distributing our product exclusively on our website will guarantee that our consumers are getting exactly what they are looking for.

2. Situation Analysis

2.1. The Industry

2.1.1. Industry Definition

2.1.1.1. The industry is obviously the automotive industry. Specifically the Electric Vehicle (EV) market. According to definitions.net, the automotive industry is something that covers a wide range of companies/organizations that design, develop, manufacture, market and sell motor-vehicles, towed-vehicles, motorcycles and mopeds.

2.1.2. Industry History

2.1.2.1. Although the automotive industry has been around for quite some time, being one of the world's leading economic sources of revenue, the electrical vehicle market has recently made a comeback due to recent political turmoil and gasoline prices skyrocketing. There is a speculated rise in demand for electrical vehicles in the next five years because of gasoline. This can be seen with the rental corporation Hertz buying 100,000 Tesla units for its car rental fleet, according to Wall Street Journal, further pushing the electrical vehicle agenda.

2.1.3. Characteristics of the Industry

2.1.3.1. The main characteristic of this industry is that of its global power and influence on the economic market. Electrical vehicles, gasoline powered vehicles and everything in between is included. The consistent need for automotive vehicles is never ending, making this industry almost indestructible. Along with that, there are increasing emission regulations being put in place. With solar powered vehicles being entirely sustainable, emission regulations shouldn't stop the vehicle from being sold in stricter states.

2.2. The Product

2.2.1. "Stage"

2.2.1.1. The NM-1 is in its beginning/intro stages of the product life cycle. Along with that, the electric vehicle industry is in the introductory stage as well. Our brand/product is just entering the market, thus leading the focus of this brand/product to increasing attention and popularity. Establishing the target market and knowing where to advertise our brand is first on the list.

2.2.2. Quality Factors

2.2.2.1. The majority of the automotive industry's top corporations engage in a wasteful practice in car manufacturing. Essentially building the frame and manufacturing the vehicle on their part will lead to wasteful materials. These wasteful materials are then thrown away and cause pollution. Our brand's intentions are delivering the highest quality product as well as engaging in sustainable practices. For example, the aluminum alloy body composite is

made of recycled aluminum, all leathers are synthetic yet, plush and plastics are recycled.

2.2.3. Design

- 2.2.3.1. Our design team produced an exquisite blueprint of what the model will look like. An elegant design featuring touch free accessories, a sleek body style and modern interior tech. Aerodynamics and comfortability derive from the body design and suspension components. Touch free would be locking/unlocking cabin door mechanisms and “refueling” (solar power=no charge up needed). Partnerships with audio company Bose and technological company Samsung can be found on the interior.

2.2.4. Packaging for Sale

- 2.2.4.1. Cars are assembled, tested and held at our headquarters and storage facility. From there, customers will then pre-order or online order the given vehicle and will be personally shipped by one of our senior technicians.

2.2.5. Pricing Structure

- 2.2.5.1. Pricing for the NM-1 will be placed at base \$28,999 MSRP. This is due to a variety of factors. The elegance of the design as well as the technological features included, let alone the solar power technology is what's influencing this price. These vehicles are bigger than Aptera and Sono motors, thus needing more material. This price is also an indirect retaliation to Aptera (\$25,900) and Sona motors (\$29,000).

2.2.6. Uses

- 2.2.6.1. Due to the car's performance function and practicality the uses for this given vehicle will be merely for commuter purposes. By no means is this vehicle meant for heavy duty mobility. This car is manufactured only for the purpose of personal use with up to 5 passenger capability, going from point A to point B as safely and efficiently as possible.

2.2.7. Product Strengths

- 2.2.7.1. The NM-1's strength is in the solar tech itself. No car manufacturer prominent in the automotive market uses solar powered technology as their main focus. Nanomotors strives to create the NM-1 as the number one solar powered vehicle in the industry. Other strengths include providing the target market's needs in a vehicle lifestyle.

2.2.8. Product Weaknesses

- 2.2.8.1. The NM-1's weakness is in its heavy load mobility. The vehicle in question cannot be used in an environment that's under construction. This is a factor once figured out unlocks market domination potential.

2.2.9. Market Opportunities/Threats

- 2.2.9.1. Nanomotors as a corporation enlisting itself in the automotive industry is the market opportunity. The vehicle speaks and performs for itself as the only solar powered compact vehicle for commoner use, with elegance of luxurious travel and the price for it all. Market threats specifically would be direct competitors. Although Aptera and Sona Motors don't hit our specific target market, they have their own set of principles and marks to hit for their market. This is not a competition for the target market, but merely a battle for relevance and popularity. Along with that, we are planning on appealing to our target market by focusing on the sustainability aspect of the vehicle and company.

2.3. ***The Market***

- 2.3.1. Nanomotors wants to target American middle class consumers, ages 25-54, with a moderate income and some level of higher education. We chose this target market because we believe it's a good middle ground. We found that 70% of Americans ages 18-34, and 62% of Americans ages 35-54 worry about global warming (Reinhart, 2021). Along with that, we found that those within our targeted age group averaged an income of \$66,048 in 2021 (DQYDJ, 2021). Our main goal is to target an age group and income class that can both afford the vehicle and understand the positive environmental impact of the NM-1 when comparing it to other competitors.

2.4. ***The Competition***

2.4.1. *Direct Competitors*

- 2.4.1.1. There are two direct competitors to Nanomotors and the NM-1, the Sion from Sono Motors and the Aptera, from Aptera Motors.

2.4.1.2. *Aptera Motors*

Aptera Motors is a solar electric vehicle manufacturer located in California. Their mission is to create the most efficient transportation on the planet. The Aptera, their solar powered electric vehicle, is currently on its third alpha stage and is currently being tested.

Strengths and Weaknesses

The biggest strength of the Aptera is the vehicle's ability to fully charge itself, with up to 40 miles of solar powered driving each day. The vehicle is lightweight and has a very aerodynamic design. These two features work to extend the range of the batteries. However, the design is also one of Aptera's weaknesses. As of right now, the Aptera is only offered as a coupe, with no back seats. Nanomotors plan to create a four-door sedan, filling the gap left with the Aptera.

Pricing

The starting price of an Aptera is \$25,900, with a range of 250 miles and daily solar charge capacity of 16 miles. This price puts it in direct competition with the NM-1.

Marketing Strategies

Aptera uses their own media channels to promote their vehicle. However, they have done integrations with influencers to spread awareness of their product. For example, Aptera brought a prototype to Jay Leno for him to feature on his YouTube channel *Jay Leno's Garage* (3.25 million subscribers) and on the CNBC show "Jay Leno's Garage." In this video, they went over key features and Jay Leno explained some of his favorite parts of the car. This brought more eyes to the brand and the positive aspects of the vehicle.

2.4.1.3. Sono Motors

Sono Motors was founded in 2016 with the plan of creating a solar powered vehicle. The company was founded on the idea of creating "mobility free from fossil fuels."

Strengths and Weaknesses

One of the Sion's strengths, but also its greatest weakness, is that the car can travel up to 154 miles a week on solar power alone. Even with the car being solar powered, if a consumer would want to travel more than 154 miles within a week, they will need to stop and charge the vehicle. With that in mind, a second strength of the Sion and Sono Motors is their commitment to sustainability. While it might be hard to produce an entire vehicle with fully sustainable materials, the company outlines the steps they're taking in order to produce the Sion with 100% renewable energy.

Pricing

The Sion is priced at €25,500 (or \$29,588.92). Customers can pre-order the vehicle for €500 (\$579.96). However, Sono Motors biggest weakness is the fact that it can only be delivered in Europe. This opens up an opportunity for Nanomotors to create an affordable and sustainable solar powered vehicle for the American market.

Marketing Strategy

Based on their website, Sono Motors likes to market with press releases, blog posts, and newsletters. They create and publish a post on their website almost every other week. They use these press releases and articles to inform pre-purchasers of their progress with the vehicle. Along with that, the company is very

active on social media. They target their posts to commuters and families. Their social media accounts also spread information about the environmental impact of the Sion. The company went on a tour across Europe in 2021 to create awareness of their brand and product.

2.4.2. Indirect Competitors

2.4.2.1. Indirect competitors to Nanomotors, and the NM-1, would be electric vehicle manufacturers. These are indirect competitors because they create products of the same type, but don't fulfill the same sustainability goals that Nanomotors hope to achieve.

2.4.2.2. Tesla Motors

Tesla is likely the strongest indirect competitor to Nanomotors in the market of electric vehicles. Tesla has been producing strictly electric cars since 2008, with the release of the Tesla Roadster. Since then, the company has released variations of their electric vehicles. Including the Tesla Model S, 3, X, and Y (respectively). Along with that, Tesla offers clean energy options for homes with their Solar Roof and Solar Panels.

Strengths and Weaknesses

Tesla's biggest strength is their brand. Over the years, Tesla has worked to create an enticing product for their customers. When someone buys a Tesla, they're not just buying a car. They're buying social status, quality, and the idea of an emissions free vehicle. However, Tesla has a few weaknesses. Even though the company produces solar panels, their production is not done with 100% renewable energy. Along with that, unless the owner of a Tesla has a renewable energy source powering their home, Tesla's are often recharged with fossil fuels. This is another place for Nanomotors to step in. The NM-1 plans to be a 100% solar powered vehicle, built with 100% renewable energy. This would fill in the gap in Tesla's sustainability.

Pricing

Tesla's cost a considerable amount of money, with their cheapest option being a base Model 3, priced at \$43,990 (before taxes). With a 72 month loan and a \$4,500 down payment, customers could spend around \$571 a month on a Tesla.

Marketing Strategies

Tesla noticed a gap in the electric vehicle market and took the industry by storm. With a marketing budget of \$0, Tesla is one of the better known car manufacturers. Tesla created a word-of-mouth advertising strategy by giving customers (who

could also be influencers) referral codes. If someone were to purchase a Tesla (or a Tesla product) with a customer's referral code, the customer would get something in return. This encourages their own consumers to sell their product for them. Along with that, they use their social media to influence customers.

3. Marketing Objectives

3.1. Marketing Goals

- 3.1.1. To become the first purely solar powered vehicle on the market, and the first to mass produce such vehicles while promoting 100% sustainability.

3.2. Marketing Objectives

- 3.2.1. Increase awareness of the benefits provided by a solar powered vehicle when it comes to fossil fuel consumption and sustainability, in ages 25-54, by 30% by January 2022.
- 3.2.2. Increase positive sentiment towards electric vehicles, more specifically the NM-1 Solar Powered vehicle from Nanomotors, in ages 25-54, by 30% by January 2022.
- 3.2.3. Increase awareness of Nanomotors commitment to sustainability in order to increase our brand awareness and loyalty, in ages 25-54, by 30% by January 2022.

4. Marketing Strategy

4.1. Positioning

- 4.1.1. Our positioning strategy is going to rely heavily on benefits offered. We want to position ourselves in the consumer's mind as a regular car, just way better for the environment. That is a huge benefit of our product. Unlike our competitors the appearance of our car will help us be segmented from the market of solar powered cars because of our unique (from competitors) yet basic model. Together, with our benefits offered and market segmentation, this will help position our brand in the consumer's mind as a top pick.

4.2. Product differentiation strategy

- 4.2.1. Our product differentiation is very simple, we want to achieve being a normal vehicle that is way better for the environment. To achieve this title, we will provide more comfort within our car. Compared to Aptera, their car looks like a spaceship. That may be intimidating to consumers. We will strive to create a comforting look of our car on both the outside and inside so consumers can remember our car as a safe one from an outside view. We also want our car to carry the same shape as other traditional vehicles. Doing so will provide a peace of mind to consumers so that they do not think they are making too big of a change from their gas run vehicle to our solar powered vehicle. Change can be scary for consumers, we have seen it with other products in the world. Creating our

car's design in a way that has been seen before will secure our preference over Aptera since their car is very intimidating at first sight.

4.3. Price/quality differentiation strategy

- 4.3.1. Our quality differentiation is going to correlate with our price because a big quality consumers look for is affordability. We obviously want our car to be affordable but along with that it needs to meet consumers needs for safety, reliability, and of course attractiveness. Compared to our competition's tacky looking products, creating a regular looking car that is good for the environment gives us more points for attractiveness. As for price, looking at the International Council of Clean Transportation predicts that in January 2022 the average price of a non-gas car will be between \$30,000-\$40,000. Since that is our target date, we will aim to be right in the middle of that average at \$30,000. Our competitors do charge a little less than we do. Our price is justifiable because our car will be made out of recycled materials which is another benefit offered in itself.

4.4. Distribution strategy

- 4.4.1. Our distribution strategy will be vertical. This means that our distribution will be centrally managed and our product will be distributed through a pre-ordering system that can be accessed through our website. This will be an easy way for consumers to explore the many different options of our product all in one place. This will prevent consumers from being limited to our options through an in person purchase. With pre-ordering, it will ensure that the consumer is always getting what is desired; they hand picked it out themselves! Distributing in this way is also a way for consumers to never settle for other cars (that could be our competitors) in the lot that they do not 100% love. This allows them to receive exactly what they are searching for. We would not choose to distribute our product indirectly through say a larger dealership like Bergstrom here in Wisconsin, that may lead to consumers demonstrating brand loyalty to their favorite companies.

5. **Advertising objectives**

1. Ad objectives- Increase awareness of Nanomotors in the Electric Vehicle industry by 25% by the end of our campaign.
2. What are desired direct and indirect actions as a result of ad exposure? The desired direct action would be increased awareness of Nanomotors. The desired indirect action would be our audience visiting our website to seek out more information about our brand.

6. **Advertising Creative Strategy**

6.1. Differentiation from Competitors

- 6.1.1. In comparison to our competitors, we plan on creating advertisements more focused on advocating for a cause rather than strictly selling a product. We are planning on emphasizing the company's commitment to

sustainability and a cleaner future. We hope this message would get consumers interested in the brand and bring them to our site where they could then purchase the product.

6.2. Target Market

- 6.2.1. We plan to target middle class Americans, ages 25-54, with some level of higher education. We chose to target college educated Americans because we believe they will understand the true message of our product because they know the impact that the amount of travel Americans do has on our planet. We are targeting people who are thinking of, or actively are “going green” in attempts to help planet Earth.
- 6.2.2. Our target market’s needs and wants are: the need to have a reliable vehicle for transportation for day-to-day life and the want to feel good about their purchase. Not only feeling good about the newest car on the market they just bought, but also the want of feeling good about making the environment healthier, with one less gas car on the road.
- 6.2.3. The perceived utility of the NM-1 is that the consumer will be getting a modern car on the exterior like a Chevrolet or a Ford, but the way the car runs will be the complete opposite of those companies and will purely be run by solar energy.
- 6.2.4. The ultimate benefit and consumer appeal is knowing that they are doing their part in helping Earth’s global climate change crisis. Our NM-1 car has the look and the driving feel of a modern sedan but has several climate saving features that our competitors do not have. Features such as preservation of Earth’s natural resources, no fuel and other air pollutant emissions associated with motor vehicles, and our consumers will no longer have to pay the expensive fuel prices that we see today.

6.3. Communications media

- 6.3.1. We are choosing to advertise the NM-1 on internet platforms that correspond with our intended audience and billboards.
- 6.3.2. For our internet ads, we want to increase positive sentiment from American middle class consumers, ages 25-54 towards eco-friendly cars by 15% within the first year of running our campaign.
- 6.3.3. As for our billboard advertisements, we want to increase awareness of the electric vehicle industry among American middle class consumers with a moderate income and some level of higher education. More specifically we want to increase awareness of Nanomotors by 5% within the first 6 months of our campaign.
- 6.3.4. Internet ads are cheaper than other mediums. Even though internet ads are cheaper, we are a new business. We need to be strategic and place our ads in locations that will be most effective and beneficial to us. We plan to use DoubleClick to make sure our ads are placed in locations where the target market will be looking. The price of DoubleClick is \$1500 for a minimum monthly display fee.

- 6.3.5. Since most of our objectives for this campaign are to increase awareness in some way, billboard ads are an effective way to achieve those objectives. For billboard ads we plan to use Lamar Advertising. We will advertise locally here in Wisconsin, which has mostly urban areas. According to indeed.com, the cost of a classic billboard, which is what we plan to use, would be as low as \$250 per month in rural areas and up to \$14,000 per month in larger cities. With these costs in mind, we can expect to spend \$10,000 on billboard ads.
- 6.3.6. We also have to consider how much we will be spending on the design and production of these advertisements. For our billboard ads, indeed.com suggests that professionals charge \$300-\$500 to create billboard ads. To stay on the safe side, we should expect to pay the maximum amount. As for our internet ads, the cost of designing these with an experienced freelance graphic designer would be about \$100 per hour.

6.4. Advertising Messaging

6.4.1. Copy Elements

- 6.4.1.1. We want our ad to appeal to our target audience of age 25-54 middle-class Americans. We plan to have a mixture of both rational and emotional appeals in the copy. Rational appeals in the way of explaining the clear benefits of driving a sustainable vehicle. We plan to have emotional appeals by using fear tactics regarding the climate crisis.
- 6.4.1.2. One of our key messages will focus on the sustainability aspect of Nanomotors and how the NM-1 could help the environment. The Nanomotors NM-1 provides a clean and sustainable source of comfortable transportation. Another key message we want to promote is it's greatest strength; the NM-1 is powered by the sun.
- 6.4.1.3. Overall, the tone of our advertisements should be simple and to the point. In general, we want the advertisements to feel green and healthy. We feel like we would benefit from a concise and informational advertisement that's visually appealing. An advertisement that explains our key messages but also convinces someone to check out the brand and our initiatives as well as the solar-powered car.

6.4.2. Artistic Elements

6.4.2.1. Visual Appeals

Visually we hope to keep the reader/viewer interested by having a simple advertisement. Clutter and too much information can push a potential customer away, so we want to minimize the amount of color and copy we put in the ad. Along with that, we plan only using a few colors, mainly different tints of green to compliment the idea of sustainability. Simplicity is key.

6.4.2.2. Art Platform Considerations

Company Website

For the company website we plan to use as much of it as we can to share our message of sustainability and inform visitors about the positive aspects of the NM-1. We plan to use a more modern website layout, with large images and smooth transitions between topics, as well as a simple modular layout.

We want the website to be simple yet informative. With simplicity comes modernity and modern website layouts feel smooth to the reader and also have interactive elements. We plan to have an interactive way to learn about the NM-1 and plan to have that flow into the purchase process.

We plan to put general information about the NM-1 Solar Powered car on the landing page for all of our digital advertisements. As well as a way for a customer to order a NM-1 if they'd like. With our landing page, we hope to inform consumers of the benefits of choosing the Nanomotors NM-1 as their next vehicle.

Digital Advertising

We plan on making digital advertising our main priority. By using DoubleClick, we plan to target ads to those interested in the environment, sustainability and electric vehicles. More specifically, digital advertisements such as medium banners(on the side) and news feed advertisements.

Once again, we plan to make these ads simple, but have enough information to get a customer to click. The brand name, slogan and picture of the product will likely be featured on every digital ad. However, there might be some variations to mix it up and keep the advertisements from getting annoying. For example, one ad might have a small informational typography piece to gain attention. Once again, the color green will contrast the white and symbolize sustainability.

Out-of-Home Advertising

Through out-of-home advertising we plan to mainly focus on billboards. The general design of the billboards will match the simplicity of all of the other advertisements: white with a green accent.

However, with billboards, we plan on using more humor and questions to get the audience wondering. Ideally, we'd like to

purchase a spot on a poster panel billboard for cost reasons. However, we'd still like to include color and the same theme across all of our advertisements.

7. Campaign Assessment

7.1. Pre-test Initiatives

- 7.1.1. Before we start our campaign we will be providing an electronic survey to calculate our brand awareness to the consumer. The survey in question will be seen on social media sites and video streaming sites such as YouTube partnered up with Google. The reason we are using social media/the Internet as our source of reaching out to consumers is because of our new day and age. The target market's demographics all predominantly use social media and technology in their day-to-day life.

7.2. Post-test Initiatives

- 7.2.1. For the post test, after running the IMC campaign, we will simply repeat the survey from the pretest and ensure that there is an increased awareness of Nanomotors and the NM-1.

7.3. Cost of Testing

- 7.3.1. We estimate the cost of testing will be around \$10,000 with Google partnerships across a multitude of different social media platforms. The survey will be then displayed throughout all given platforms for 90 days straight.

8. Total Ad Budget

- 8.1.1. Since we are a newer business and our main goal is to build awareness about our new brand/product we chose to use internet ads as our main medium of advertising. We plan to use DoubleClick ads which cost roughly \$1500. If we use these ads on 3 different websites the cost of internet advertising will be \$4500. For billboard ads we plan to use Lamar Advertising. In Madison and Milwaukee, which are the 2 most populated cities in Wisconsin, we will be able to place 4 different large billboards (2 in each city) for a total of \$8000. Our goal is to spend \$10,000 on large billboards, with that \$2000 left over, we plan to place large billboards along the highway near Wisconsin's major cities. We also plan to pay the best graphic designer for digital ads, as well as the best billboard creative team to help us design our ads. That is going to cost us about \$1000. Along with that, we estimate around \$5,000 in design fees. As for the cost of our pre and post-test survey, we estimate a cost around \$10,000. Our total ad budget is \$25,500.

References

About Tesla | Tesla. (2003). Tesla. <https://www.tesla.com/about>

Aptera. (2006). *Aptera Motors*. <https://www.aptera.us/>

Arens, W., & Weigold, M. (2020). *Contemporary Advertising* (16th ed.). McGraw-Hill Education.

CNBC [Jay Leno's Garage]. (2021, October 11). *Aptera Alpha Development Vehicle | Jay Leno's Garage* [Video]. YouTube. <https://www.youtube.com/watch?v=TsYyJJFYRvc>

How Much Does a Billboard Cost (and Is It Worth It)? (2021). Indeed.

<https://www.indeed.com/hire/c/info/how-much-does-a-billboard-cost>

Mangram, M. E. (2012). The globalization of Tesla Motors: a strategic marketing plan analysis.

Journal of Strategic Marketing, 20(4), 289–312.

<https://doi.org/10.1080/0965254x.2012.657224>

P.K. (2021). *Average income by age, median, top 1%, and all income percentiles*. DQYDJ.

<https://dqydj.com/average-median-top-income-by-age-percentiles/>

Reinhart, B. R. J. (2021, August 13). *Global Warming Age Gap: Younger Americans Most Worried*. Gallup.

<https://news.gallup.com/poll/234314/global-warming-age-gap-younger-americans-worried.aspx>

Sono Motors. (2016). *Driven by the sun* | Sono Motors. <https://sonomotors.com/>

The Editorial Board. (2021, October 27). *Behind That Hertz Tesla Purchase*. WSJ.

<https://www.wsj.com/articles/behind-that-hertz-tesla-purchase-elon-musk-mark-fields-rental-cars-electric-vehicles-congress-subsidy-11635283895>

The International Council on Clean Transportation, Lutsey, N. L., & Nicholas, M. N. (2019, April).

Update on electric vehicle costs in the United States through 2030.

https://theicct.org/sites/default/files/publications/EV_cost_2020_2030_20190401.pdf