

SUMMARY OF ECONOMIC IMPACT ANALYSIS AND IMPACT REVIEW

The Governor's Office of Economic Development ("GOED") uses IMPLAN for economic modeling of new and expanding businesses applying for incentives administered by our agency. IMPLAN is a widely-accepted and utilized software tool that models the economic relationships between government, industry, and household sectors for a specific region so that when there is a change in any of these sectors, one can measure the effects/impacts that will happen to the other.

The version of IMPLAN used by GOED is owned and designed by Applied Economics, an economic consulting firm based in Phoenix, Arizona that specializes in socioeconomic modeling, economic development, and economic and fiscal impact assessment. Applied Economics has a 20-year history in providing specialized economic consulting, and has provided service to GOED and its predecessor agency, the Nevada Commission of Economic Development, for a number of years.

For the Faraday Future project, GOED contracted with Applied Economics to complete an economic impact which includes a net tax revenue analysis. In the report you will find a regional growth scenario that uses multipliers based on the current economy of Clark County in the short term, and then reflects a moderate expansion of the local supply base over a ten year period. Local multipliers were applied in the early years, expanding up to one-third of the national multiplier level by 2025. Through its licensed software, GOED creates regional models for standard abatements in the state. These models do not take into account the cluster effect and addition of supply chain and infrastructure that comes from bringing in a company with the size and scale of Faraday Future. For larger scale projects such as Faraday Future, GOED commissions the development of a custom model that studies both regional and national impacts to better assess the economic impact of these types of projects.

One purpose in creating a custom model for the Faraday Future project was to show the significance of large scale projects. The other purpose was to allow results from IMPLAN to be compared against other results generated by the Nevada Department of Taxation using its own software developed by Regional Economic Models Incorporated (REMI).

There are a number of major economic modeling programs available, but those most notable for this type of analysis include IMPLAN and REMI. By commissioning a separate report from REMI, GOED's goal was to make sure that the IMPLAN results were reasonable and accurate.

Assisting GOED in its review of these results was Dr. Alan Schlottmann, Professor of Economics at the University of Nevada, Las Vegas. Dr. Schlottman is a respected economist

with real-world experience studying complex manufacturing projects, including the BMW factory located in South Carolina.

Also providing assistance was Jeff Hardcastle, the Nevada State Demographer. Jeff is part of the Nevada Department of Taxation and has over 20 years' experience running the REMI model.

Since the Nevada Department of Taxation does not have national licensing for REMI and cannot run the national model, GOED requested both regional and statewide models be created for the Faraday Future project. From that analysis REMI yields impact estimates similar to those produced by IMPLAN. Mr. Hardcastle's work shows an economic output of over \$81.6 billion over the next 20 years using his state model which compares favorably with the \$87.5 billion estimated by the IMPLAN regional growth model.

Given this outside analysis, it was determined that the IMPLAN model provides a reasonable and accurate estimate for the Faraday Future project.



Economic Impact of Faraday Future On Clark County

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Prepared By:



APPLIED ECONOMICS

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Disclaimer: The information and observations contained in this report are based on our present knowledge of the components of development, and of the current physical, socioeconomic and fiscal conditions of the affected areas. Estimates made in this analysis are based on hypothetical assumptions, current tax policies, and the current economic structure of the region. However, even if the assumptions outlined in this report were to occur, there will usually be differences between the estimates and the actual results because events and circumstances frequently do not occur as expected. This analysis is based on the best available information and is intended to aid the State of Nevada in quantifying the impacts of Faraday Future on the local economy. In no way will Applied Economics LLC be held responsible or have any liability or be subject to damages as a result of this analysis. This report may be used only for the purposes that it was intended.

INTRODUCTION

Applied Economics has been contracted by the Nevada Governor's Office of Economic Development to perform a third party economic analysis of a planned auto manufacturing facility in Clark County, in order to quantify the impacts of their operations on the county and state relative to the amount of abatements and reimbursements being offered. This analysis is intended to provide a framework for understanding the economic and revenue impacts of the company's proposed location in Clark County.

Faraday Future would make a major capital investment as well as generate a significant number of new jobs that would provide economic benefits to the region. They would also support improvements in utility infrastructure that would enhance the competitiveness of the Apex Industrial Park in North Las Vegas for future industrial projects including an enhanced interchange at the intersection of I-15 and State Route 93, extension of the municipal water system, natural gas infrastructure and construction of a rail port to serve the site.

Faraday Future would be an important contributor to Nevada's economy and could help to diversify the economy of Southern Nevada by adding high quality primary jobs in advanced manufacturing. Primary jobs are especially attractive as most of the sales generated by Faraday Future will be to customers outside of the region which, in turn, brings new wealth of the state. In addition, all of the jobs created by the company would be net new jobs thereby growing the economy both locally and regionally. The attraction of this company to Clark County would not only create a large number of new direct jobs, but also support significant additional economic activity, jobs and payroll at related local supplier and consumer businesses.

IMPACT METHODOLOGY

The development and operation of Faraday Future in Clark County would provide a variety of economic benefits to the region. These benefits, or economic impacts, are derived from expenditures made in the local economy by the company, its employees, suppliers and customers. The economic impacts include direct and indirect jobs, personal income, and economic activity or output that would be generated by the auto manufacturing facility.

Economic impacts measure the effects of economic stimuli, or expenditures, in the local economy. These impacts include direct, indirect and induced jobs, personal income and output that could be generated by Faraday Future. Indirect and induced impacts are the result of the multiplier effect and capture supported supplier and consumer businesses and their employees that would benefit from this type of facility.

This analysis utilized a low and high scenario to develop a regional growth scenario, as shown in the Key Findings. The regional growth scenario uses multipliers based on the current economy of Clark County in the short term, and then reflects a moderate expansion of the local supplier base over a ten year period. Local multipliers are applied for the first 4 years and then there is gradual increase in years 5 to 10 up to 33 percent of the national multiplier level for output. The indirect and induced jobs and income multipliers are adjusted proportionally to reflect national ratios for indirect and induced output per job and income per job by year 10. However, the magnitude of indirect and induced jobs and income impacts are maintained at 33 percent of national levels. Note that the national multipliers reflect a high level of supplier availability that is consistent with the most developed auto industry clusters in areas such as Detroit, Kokomo or Chicago.

Given the overall size of the company's operations in Nevada and propensity for co-locating suppliers in the auto industry, it is expected that over the longer term a cluster of local suppliers would develop. This type of clustering is often observed in the auto industry in other parts of the country. The regional growth scenario assumes that some economic base changes will occur over the next 20 years in response to supply chain demand.

PROJECT SUMMARY

Based on the assumptions used in this analysis, the company would create a total of 4,500 jobs within the next nine years including assemblers, process and quality assurance engineers, maintenance mechanics, logistics workers, supervisors and managers. The average wage is estimated at \$22.10 per hour in 2015 dollars.¹ The company would build out in phases beginning with 50 jobs in 2015 and ramping up to 1,000 jobs by 2017. They would add 3,000 additional jobs by 2021, and 500 additional jobs by 2023 for a total of 4,500 jobs. In the proforma shown here, the company would make a \$638 million investment in land and buildings and \$737 million in equipment over the twenty year period (Table 1).

**TABLE 1
PROJECT DESCRIPTION**

Year	Jobs	Payroll	Capital Investment			Utilities		
			Construction	Land	Equipment	Electric (15.98 MW, 70 Mwh per yr) ¹	Economic Development Rider	Natural Gas (335,000 therms per yr) ²
2015	50	\$2,399,980	\$1,000,000	\$26,000,000	\$0	\$0	\$0	\$0
2016	300	\$13,795,428	\$359,237,537	\$0	\$300,000,000	\$0	\$0	\$0
2017	1,000	\$46,008,464	\$130,762,463	\$0	\$270,000,000	\$1,955,429	\$0	\$56,650
2018	2,339	\$108,221,236	\$90,000,000	\$0	\$90,000,000	\$1,955,429	\$0	\$56,650
2019	3,668	\$167,856,208	\$1,000,000	\$0	\$3,000,000	\$6,339,915	(\$985,740)	\$225,924
2020	3,668	\$167,856,208	\$2,000,000	\$0	\$4,000,000	\$6,339,915	(\$985,740)	\$225,924
2021	4,000	\$183,251,624	\$2,000,000	\$0	\$5,000,000	\$6,339,915	(\$657,160)	\$225,924
2022	4,200	\$192,389,316	\$2,000,000	\$0	\$5,000,000	\$6,339,915	(\$657,160)	\$225,924
2023	4,500	\$206,149,188	\$2,000,000	\$0	\$5,000,000	\$6,339,915	(\$657,160)	\$225,924
2024	4,500	\$206,149,188	\$2,000,000	\$0	\$5,000,000	\$6,339,915	(\$657,160)	\$225,924
2025	4,500	\$206,149,188	\$2,000,000	\$0	\$5,000,000	\$6,339,915	(\$328,580)	\$225,924
2026	4,500	\$206,149,188	\$2,000,000	\$0	\$5,000,000	\$6,339,915	(\$328,580)	\$225,924
2027	4,500	\$206,149,188	\$2,000,000	\$0	\$5,000,000	\$6,339,915	\$0	\$225,924
2028	4,500	\$206,149,188	\$2,000,000	\$0	\$5,000,000	\$6,339,915	\$0	\$225,924
2029	4,500	\$206,149,188	\$2,000,000	\$0	\$5,000,000	\$6,339,915	\$0	\$225,924
2030	4,500	\$206,149,188	\$2,000,000	\$0	\$5,000,000	\$6,339,915	\$0	\$225,924
2031	4,500	\$206,149,188	\$2,000,000	\$0	\$5,000,000	\$6,339,915	\$0	\$225,924
2032	4,500	\$206,149,188	\$2,000,000	\$0	\$5,000,000	\$6,339,915	\$0	\$225,924
2033	4,500	\$206,149,188	\$2,000,000	\$0	\$5,000,000	\$6,339,915	\$0	\$225,924
2034	4,500	\$206,149,188	\$2,000,000	\$0	\$5,000,000	\$6,339,915	\$0	\$225,924
20 Year Total	4,500	\$3,355,568,720	\$612,000,000	\$26,000,000	\$737,000,000	\$105,349,497	(\$5,257,280)	\$3,728,083

¹ Electric usage and consumption apply from 2019 forward. Estimate assumes company can achieve 50% load factor and qualify for EDRR.

² Natural gas usage level applies from 2019 forward. Estimate assumes sales rate schedule.

¹ The incentive agreement with the company requires a minimum average wage of \$22 per hour.

Economic Impacts

- **Construction Impacts.** Construction jobs are not permanent and should therefore be viewed as a “person-year” equivalent. About 4,000 direct construction jobs and 2,700 additional indirect jobs would be created in Clark County over a 20 year period from 2015 to 2034 through the new construction activity associated with the building and site improvements for the manufacturing facility. This level of construction activity would result in a one-time economic impact of \$976.8 million. These construction impacts are in addition to the operations impacts detailed below.

There would also be regional construction impacts associated with utility infrastructure including new electric substations, wastewater treatment facilities, and extension of natural gas and water lines, none of which are included in these estimates.

- **Operations Impacts.** All total, Faraday Future could create an annual economic impact of \$5.6 billion at stabilized (or full operational) annual levels, or \$87.5 billion over the next 20 years on Clark County. Their operations could directly and indirectly support an estimated 13,600 total jobs (based on 4,500 direct jobs) and \$696.5 million in annual personal income, or \$10.7 billion in personal income over the 20 year period. The company could increase annual GRP in Clark County by an estimated 4 percent based on their total annual impact.
- **Overall Stabilized Impacts.** Based on the construction and operations impacts combined, Faraday Future could generate overall impacts of \$88.5 billion over 20 years.
- **Jobs and Income.** The facility would directly employ about 4,500 people with an estimated annual payroll of \$206.1 million by 2023 (excluding inflation). Through the multiplier effect, an additional 9,100 jobs and \$490.3 million in annual payroll could be supported at other local businesses, based on the level of supplier demand that could be met locally. The additional jobs and payroll at other local businesses stem from direct and indirect impacts of supplier demand created by the auto manufacturing facility and consumer demand created by its employees.
- **Supported Population.** The 4,500 direct jobs and an estimated 9,100 indirect and induced jobs associated with Faraday Future’s operations would support a population (including families) of about 30,000 people. This estimate assumes that approximately 98 percent of the workforce would live in Clark County based on current commuting patterns.

Revenue Impacts

- **Direct Revenue Impacts.** Based on a capital investment of \$1.38 billion in land, buildings and equipment, the project would generate an estimated \$6.4 million in average annual property tax revenues and \$2.7 million in average annual modified business taxes, net of incentives. All total, the company could generate about \$156.2 million in direct state and local revenues the next 20 years, after incentives.
- **Indirect Revenue Impacts.** In addition to direct revenues, Faraday Future and its employees would generate indirect property and sales tax revenues through employee spending and property ownership. Indirect revenues are estimated at \$40.0 million per year at stabilized annual levels, or \$610.9 million over 20 years, based on the level of economic impacts and the total number of indirect and induced employees that could be supported by Faraday Future.
- **Value of Abatements and Reimbursements.** Over the 20 year period, the company could generate up to \$767.1 million in direct and indirect revenues in Nevada, net of abatements and reimbursements. The proposed package of abatements, reimbursements and tax credits associated with Faraday Future would total \$215.9 million over 10 years. Abatements are higher during the first ten years due to the effect of sales and use tax abatements on equipment and construction materials. The incentives include a 10 year, 75 percent real and personal property tax abatement; an abatement of all sales and use taxes on equipment purchases and construction materials for 15 years; a 75 percent abatement of modified business taxes for 10 years; and additional Transferrable Tax Credits totaling \$38.0 million, or \$9,500 per job for the first 4,000 jobs.

**Project Robin
Summary of Key Findings
(Regional Growth Scenario)**

Jobs and Income Created	Jobs	Annual Personal Income	Average Wage
Direct	4,500	\$206.1 million	\$22.02
Indirect	9,078	\$490.3 million	\$25.97
Total	13,578	\$696.5 million	\$24.66
Economic Impact	Stabilized Annual	10 Year	20 Year
Direct	\$3.5 billion	\$21.9 billion	\$56.8 billion
Indirect	\$2.1 billion	\$9.4 billion	\$30.7 billion
Total	\$5.6 billion	\$31.3 billion	\$87.5 billion
Construction Impact (20 Years)	Total		
Direct Jobs	4,046		
Indirect Jobs	2,655		
Total	6,701		
One-Time Economic Impact	\$976.8 million		
Capital Investment (20 Years)	Total		
Direct Construction	\$612.0 million		
Equipment ¹	\$737.0 million		
Land	\$26.0 million		
Total	\$1.4 billion		
Tax Revenue Impact (Net of Abatements)	Stabilized Annual	10 Year	20 Year
Direct			
State of Nevada	\$0.8 million	\$5.6 million	\$38.3 million
Local Government	\$1.8 million	\$16.5 million	\$71.7 million
School District	\$1.1 million	\$10.1 million	\$46.2 million
Total	\$3.7 million	\$32.3 million	\$156.2 million
Indirect			
State of Nevada	\$12.6 million	\$64.8 million	\$191.3 million
Local Government	\$13.4 million	\$71.7 million	\$205.9 million
School District	\$13.9 million	\$74.4 million	\$213.7 million
Total	\$40.0 million	\$211.0 million	\$610.9 million
Total			
State of Nevada	\$13.5 million	\$70.5 million	\$229.7 million
Local Government	\$15.2 million	\$88.3 million	\$277.6 million
School District	\$15.0 million	\$84.6 million	\$259.8 million
Total	\$43.7 million	\$243.3 million	\$767.1 million

¹ Equipment assumes initial purchase of \$667 million with annual replacements of \$5.0 million.

ECONOMIC IMPACT ANALYSIS

The economic benefits resulting from the attraction of Faraday Future to Clark County can be measured in terms of both the one-time construction impacts and on-going operations impacts. These impacts include direct and indirect jobs, personal income and economic activity, or output that would be generated by the project. Indirect impacts are the result of the multiplier effect and capture supported supplier and consumer businesses and employees in Southern Nevada that would benefit from the new facility.

Construction Impacts

Total personal income, or earnings, from construction and the total increase in economic activity from new construction expenditures are shown in Table 2. The facility required for this project would result in direct construction expenditures of about \$612.0 million over 20 years, excluding land acquisition. The multiplier effect of this spending would result in a total increase in economic activity of about \$976.8 million. The approximately 6,700 direct and indirect jobs created locally by the construction could result in more than \$346.4 million in personal income over the 20 year period. There would be additional construction impacts related to utility improvements that are not included here.

**TABLE 2
CONSTRUCTION IMPACT OF PROJECT ROBIN
ON CLARK COUNTY**

Year	Direct			Total		
	Construction Expenditures	Jobs	Personal Income	Output	Jobs	Personal Income
Facilities						
2015	\$1,000,000	7	\$400,000	\$1,596,010	11	\$566,057
2016	\$359,237,537	2,375	\$143,695,015	\$573,346,701	3,933	\$203,348,839
2017	\$130,762,463	864	\$52,304,985	\$208,698,199	1,432	\$74,018,977
2018	\$90,000,000	595	\$36,000,000	\$143,640,900	985	\$50,945,109
2019	\$1,000,000	7	\$400,000	\$1,596,010	11	\$566,057
2020	\$2,000,000	13	\$800,000	\$3,192,020	22	\$1,132,114
2021	\$2,000,000	13	\$800,000	\$3,192,020	22	\$1,132,114
2022	\$2,000,000	13	\$800,000	\$3,192,020	22	\$1,132,114
2023	\$2,000,000	13	\$800,000	\$3,192,020	22	\$1,132,114
2024	\$2,000,000	13	\$800,000	\$3,192,020	22	\$1,132,114
2025	\$2,000,000	13	\$800,000	\$3,192,020	22	\$1,132,114
2026	\$2,000,000	13	\$800,000	\$3,192,020	22	\$1,132,114
2027	\$2,000,000	13	\$800,000	\$3,192,020	22	\$1,132,114
2028	\$2,000,000	13	\$800,000	\$3,192,020	22	\$1,132,114
2029	\$2,000,000	13	\$800,000	\$3,192,020	22	\$1,132,114
2030	\$2,000,000	13	\$800,000	\$3,192,020	22	\$1,132,114
2031	\$2,000,000	13	\$800,000	\$3,192,020	22	\$1,132,114
2032	\$2,000,000	13	\$800,000	\$3,192,020	22	\$1,132,114
2033	\$2,000,000	13	\$800,000	\$3,192,020	22	\$1,132,114
2034	\$2,000,000	13	\$800,000	\$3,192,020	22	\$1,132,114
Total	\$612,000,000	4,046	\$244,800,000	\$976,758,120	6,701	\$346,426,742

Operations Impacts

For the operations impact, the analysis presents a regional growth scenario that reflects future changes in the economic base. Given the overall size of the company's operations in Nevada and propensity for co-locating suppliers, it is expected that over the longer term a cluster of local suppliers would develop. The regional growth scenario assumes that some economic base changes will occur over the next 20 years in response to supply chain demand and that the share of supplier demand that could be met locally would increase over time as reflected in the corresponding levels of indirect and induced output. The on-going economic impacts from the operations of Faraday Future over the next 20 years are shown in Table 3.

**TABLE 3
ANNUAL OPERATIONS IMPACT OF PROJECT ROBIN
ON CLARK COUNTY**

Year	Direct			Indirect			Induced			Total		
	Output	Jobs	Personal Income	Output	Jobs	Personal Income	Output	Jobs	Personal Income	Output	Jobs	Personal Income
2015	\$40,650,068	50	\$2,399,980	\$6,354,134	34	\$2,259,814	\$2,864,692	22	\$912,757	\$49,868,894	106	\$5,572,551
2016	\$233,662,402	300	\$13,795,428	\$36,524,471	197	\$12,989,735	\$16,466,657	126	\$5,246,656	\$286,653,530	623	\$32,031,819
2017	\$779,276,163	1,000	\$46,008,464	\$121,810,995	656	\$43,321,437	\$54,917,150	422	\$17,497,867	\$956,004,308	2,078	\$106,827,768
2018	\$1,833,015,541	2,339	\$108,221,236	\$286,524,158	1,543	\$101,900,804	\$129,176,271	992	\$41,158,531	\$2,248,715,971	4,874	\$251,280,571
2019	\$2,843,092,995	3,668	\$167,856,208	\$575,078,627	2,683	\$175,788,046	\$250,818,128	1,825	\$75,665,711	\$3,668,989,751	8,176	\$419,309,965
2020	\$2,843,092,995	3,668	\$167,856,208	\$705,744,859	2,972	\$193,523,171	\$301,277,807	2,113	\$87,492,612	\$3,850,115,662	8,753	\$448,871,992
2021	\$3,103,855,465	4,000	\$183,251,624	\$913,124,946	3,560	\$230,634,460	\$383,998,104	2,621	\$108,428,889	\$4,400,978,514	10,181	\$522,314,973
2022	\$3,258,626,673	4,200	\$192,389,316	\$1,108,420,993	4,069	\$262,462,070	\$460,980,493	3,081	\$127,391,074	\$4,828,028,159	11,350	\$582,242,460
2023	\$3,491,686,839	4,500	\$206,149,188	\$1,348,171,422	4,715	\$303,014,647	\$555,921,297	3,655	\$151,027,176	\$5,395,779,558	12,869	\$660,191,011
2024	\$3,491,686,839	4,500	\$206,149,188	\$1,508,646,498	5,070	\$324,795,680	\$617,892,326	4,008	\$165,552,144	\$5,618,225,662	13,578	\$696,497,013
2025	\$3,491,686,839	4,500	\$206,149,188	\$1,508,646,498	5,070	\$324,795,680	\$617,892,326	4,008	\$165,552,144	\$5,618,225,662	13,578	\$696,497,013
2026	\$3,491,686,839	4,500	\$206,149,188	\$1,508,646,498	5,070	\$324,795,680	\$617,892,326	4,008	\$165,552,144	\$5,618,225,662	13,578	\$696,497,013
2027	\$3,491,686,839	4,500	\$206,149,188	\$1,508,646,498	5,070	\$324,795,680	\$617,892,326	4,008	\$165,552,144	\$5,618,225,662	13,578	\$696,497,013
2028	\$3,491,686,839	4,500	\$206,149,188	\$1,508,646,498	5,070	\$324,795,680	\$617,892,326	4,008	\$165,552,144	\$5,618,225,662	13,578	\$696,497,013
2029	\$3,491,686,839	4,500	\$206,149,188	\$1,508,646,498	5,070	\$324,795,680	\$617,892,326	4,008	\$165,552,144	\$5,618,225,662	13,578	\$696,497,013
2030	\$3,491,686,839	4,500	\$206,149,188	\$1,508,646,498	5,070	\$324,795,680	\$617,892,326	4,008	\$165,552,144	\$5,618,225,662	13,578	\$696,497,013
2031	\$3,491,686,839	4,500	\$206,149,188	\$1,508,646,498	5,070	\$324,795,680	\$617,892,326	4,008	\$165,552,144	\$5,618,225,662	13,578	\$696,497,013
2032	\$3,491,686,839	4,500	\$206,149,188	\$1,508,646,498	5,070	\$324,795,680	\$617,892,326	4,008	\$165,552,144	\$5,618,225,662	13,578	\$696,497,013
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2034	\$3,491,686,839	4,500	\$206,149,188	\$1,508,646,498	5,070	\$324,795,680	\$617,892,326	4,008	\$165,552,144	\$5,618,225,662	13,578	\$696,497,013
20 Yr Total	\$56,835,514,365	4,500	\$3,355,568,720	\$21,696,866,080	5,070	\$4,898,646,667	\$8,953,236,181	4,008	\$2,435,894,860	\$87,485,616,626	13,578	\$10,690,110,247

The company would open with about 50 jobs and \$2.4 million in payroll in 2015. By 2023, they would expand to 4,500 jobs and \$206.1 million in payroll. Through their local supplier purchases, as well as employee spending, they could create an annual economic impact of \$5.6 billion at full operational/stabilized levels. Faraday Future could indirectly support an estimated 9,100 additional jobs and \$490.3 million in annual personal income at other local businesses in Clark County on an on-going basis.

The multiplier effect of the auto manufacturing operations on the region could result in a total economic impact of \$87.5 billion over the next 20 years, based on direct employment of 4,500 jobs and an estimated annual payroll of \$206.1 million. Should the number of jobs or the amount of payroll increase, the economic impacts would increase proportionally.

The new jobs generated directly and indirectly by the manufacturing operation could support a total local population of about 30,000 people, most of whom would live in Clark County. This includes families of direct employees, as well as families of employees at related supplier and consumer businesses supported through the multiplier effect. The supported population estimate assumes that about 98 percent of the employees will work and live in the region.

The secondary or indirect impacts described here are called multiplier effects. Multiplier effects are a way of representing the larger economic effects on the local economy. The multiplier effects translate into an increase in output (loosely defined as sales, less profits) into a corresponding increase in jobs and personal income. In essence, the multiplier effect represents the recycling of local spending. This recycling process creates new business opportunities.

In looking at the differences between the local multipliers and the regional growth scenario, it is evident that both the indirect (supplier) and induced (employee spending) impacts will likely increase over time. However, the regional growth scenario yields much lower indirect and induced impacts than a scenario based on national multipliers where almost all supplier demand is being met locally. In the regional growth scenario, it is assumed that the local economy adjusts over time to the presence of this new industry, but some supplier demand will continue to be met by non-local providers. In terms of the induced impacts, it is likely that most of the employee spending could already be captured locally, however, as the number of indirect jobs and personal income increases, so does the level of aggregate employee spending, and hence the increase in induced impacts in the regional growth scenario. Details on economic impact results using local and national multipliers are shown in Appendix A.

The multipliers used in this analysis are from IMPLAN, a national vendor of economic impact software. Industry specific multipliers for auto manufacturing as well as commercial construction were used in the analysis. The average output multiplier for the regional growth scenario is 1.61 and the average jobs multiplier is 3.02. This means that for every \$1 billion of output created by the company, an additional \$610 million in economic activity is generated in

the regional economy and for every one direct job created by the company, an additional 2.02 indirect jobs are generated.

Revenue Impacts

In addition to supporting jobs and output at related businesses in the area through multiplier effects, Faraday Future would also generate state and local tax revenues to North Las Vegas, Clark County and the State of Nevada. All total, the company could generate \$767.1 million in new direct and indirect tax revenues in Nevada, net of abatements and reimbursements, over the next 20 years. Note that the direct revenue impacts remain the same in all scenarios, whereas the indirect or employee-driven revenues vary depending on the number of indirect and induced jobs supported by the project.

Direct Revenues

All sales taxes generated by the company on equipment purchases and construction materials would be abated for the first 15 years. Real and personal property taxes would be partially abated at a rate of 75 percent over ten years. Over 20 years, the company could still generate \$116.7 million in state and local property taxes, net of incentives (Table 4). Modified business tax would similarly be partially abated at a rate of 75 percent for 10 years. The remaining modified business taxes to the state are estimated at \$31.8 million over 20 years. Sales tax revenues after year 15 are estimated at \$2.5 million total. All total, this would result in \$156.2 million in direct revenues net of incentives over 20 years.

**TABLE 4
DIRECT REVENUE IMPACT OF PROJECT ROBIN
NET OF ABATEMENTS AND REIMBURSEMENTS**

Year	City		School		County and Other Local Govts		State			Total Direct Revenues
	Property Tax ¹	Franchise	Property Tax ¹	Sales Tax ²	Property Tax ¹	Sales Tax ²	Sales Tax ²	Property Tax ¹	MBT ³	
2015	\$28,986	\$0	\$30,793	\$0	\$15,453	\$0	\$0	\$4,016	\$7,272	\$86,519
2016	\$736,702	\$0	\$782,637	\$0	\$392,759	\$0	\$0	\$102,078	\$45,300	\$2,059,476
2017	\$1,127,869	\$100,604	\$1,198,194	\$0	\$601,304	\$0	\$0	\$156,278	\$152,801	\$3,337,051
2018	\$1,249,328	\$100,604	\$1,327,227	\$0	\$666,057	\$0	\$0	\$173,108	\$360,417	\$3,876,741
2019	\$1,180,283	\$279,005	\$1,253,876	\$0	\$629,247	\$0	\$0	\$163,541	\$559,430	\$4,065,381
2020	\$1,123,013	\$279,005	\$1,193,035	\$0	\$598,714	\$0	\$0	\$155,605	\$559,430	\$3,908,802
2021	\$1,074,838	\$295,434	\$1,141,857	\$0	\$573,031	\$0	\$0	\$148,930	\$610,808	\$3,844,898
2022	\$1,031,462	\$295,434	\$1,095,776	\$0	\$549,906	\$0	\$0	\$142,920	\$641,302	\$3,756,799
2023	\$995,928	\$295,434	\$1,058,026	\$0	\$530,961	\$0	\$0	\$137,996	\$687,221	\$3,705,566
2024	\$967,297	\$295,434	\$1,027,610	\$0	\$515,697	\$0	\$0	\$134,029	\$687,221	\$3,627,288
2025	\$3,779,539	\$311,863	\$4,015,202	\$0	\$2,014,995	\$0	\$0	\$523,695	\$2,748,884	\$13,394,179
2026	\$3,697,655	\$311,863	\$3,928,212	\$0	\$1,971,339	\$0	\$0	\$512,349	\$2,748,884	\$13,170,303
2027	\$3,603,925	\$328,292	\$3,828,638	\$0	\$1,921,369	\$0	\$0	\$499,362	\$2,748,884	\$12,930,469
2028	\$3,493,422	\$328,292	\$3,711,245	\$0	\$1,862,456	\$0	\$0	\$484,051	\$2,748,884	\$12,628,349
2029	\$3,387,674	\$328,292	\$3,598,903	\$0	\$1,806,079	\$0	\$0	\$469,398	\$2,748,884	\$12,339,230
2030	\$3,274,845	\$328,292	\$3,479,040	\$161,200	\$1,745,926	\$217,000	\$124,000	\$453,765	\$2,748,884	\$12,532,951
2031	\$3,146,730	\$328,292	\$3,342,935	\$161,200	\$1,677,623	\$217,000	\$124,000	\$436,013	\$2,748,884	\$12,182,676
2032	\$2,992,599	\$328,292	\$3,179,194	\$161,200	\$1,595,451	\$217,000	\$124,000	\$414,656	\$2,748,884	\$11,761,277
2033	\$2,906,692	\$328,292	\$3,087,931	\$161,200	\$1,549,651	\$217,000	\$124,000	\$402,753	\$2,748,884	\$11,526,403
2034	\$2,891,682	\$328,292	\$3,071,985	\$161,200	\$1,541,649	\$217,000	\$124,000	\$400,673	\$2,748,884	\$11,485,365
Total	\$42,690,468	\$5,191,015	\$45,352,316	\$806,000	\$22,759,667	\$1,085,000	\$620,000	\$5,915,217	\$31,800,042	\$156,219,724

Note: All figures are in constant 2015 dollars.

¹ Property tax calculation assumes 75% abatement of real and personal property for 10 years.

² This analysis assumes a full abatement of local sales and use taxes on capital equipment and construction materials.

³ This analysis assumes a 75% abatement of MBT for 10 years.

Indirect Revenues

Along with the direct taxes paid by the company, there would also be indirect taxes generated by employees. Using the results from the economic impact analysis on direct, indirect and induced employees and income, it is possible to estimate indirect or employee-driven tax impacts for each of the scenarios. In total, all the employees associated with this project could generate \$610.9 million in state and local revenues over the next 20 years.

Indirect property tax revenues were based on average residential assessed value per capita in Clark County, times the annual supported population, times a total property tax rate of 3.35 percent. For city property tax, the model assumes that 21 percent of the supported population would live in North Las Vegas. Indirect property taxes are estimated at about \$8.4 million per year to the school district, \$1.7 million to the city, \$4.3 million to the county and \$1.1 million to the state (Table 5). All total the company could generate about \$238.3 million in indirect property tax revenues to all jurisdictions combined over 20 years. Details on indirect revenue impact results using local and national multipliers are shown in Appendix A.

**TABLE 5
INDIRECT REVENUE IMPACT OF PROJECT ROBIN**

Year	City	School		County and Other Local Govts		State			Total Indirect Revenues
	Property Tax	Property Tax	Sales Tax	Property Tax	Sales Tax	Sales Tax	Property Tax	MBT	
2015	\$13,287	\$65,874	\$44,016	\$33,733	\$59,253	\$34,550	\$8,592	\$46,795	\$306,101
2016	\$77,953	\$386,465	\$253,013	\$197,902	\$340,594	\$198,597	\$50,406	\$268,987	\$1,773,917
2017	\$259,914	\$1,288,559	\$843,811	\$659,849	\$1,135,900	\$662,332	\$168,064	\$897,085	\$5,915,515
2018	\$609,718	\$3,022,765	\$1,984,815	\$1,547,906	\$2,671,866	\$1,557,940	\$394,253	\$2,110,125	\$13,899,388
2019	\$1,022,858	\$5,070,967	\$3,312,046	\$2,596,756	\$4,458,523	\$2,599,722	\$661,397	\$3,708,943	\$23,431,212
2020	\$1,094,999	\$5,428,614	\$3,545,550	\$2,779,901	\$4,772,856	\$2,783,006	\$708,044	\$4,144,983	\$25,257,953
2021	\$1,273,634	\$6,314,222	\$4,125,662	\$3,233,406	\$5,553,775	\$3,238,353	\$823,552	\$5,001,184	\$29,563,788
2022	\$1,419,895	\$7,039,332	\$4,599,017	\$3,604,722	\$6,190,984	\$3,609,903	\$918,127	\$5,750,334	\$33,132,313
2023	\$1,609,996	\$7,981,787	\$5,214,717	\$4,087,338	\$7,019,811	\$4,093,184	\$1,041,049	\$6,697,117	\$37,744,999
2024	\$1,698,594	\$8,421,024	\$5,501,491	\$4,312,263	\$7,405,853	\$4,318,281	\$1,098,338	\$7,232,630	\$39,988,474
2025	\$1,698,594	\$8,421,024	\$5,501,491	\$4,312,263	\$7,405,853	\$4,318,281	\$1,098,338	\$7,232,630	\$39,988,474
2026	\$1,698,594	\$8,421,024	\$5,501,491	\$4,312,263	\$7,405,853	\$4,318,281	\$1,098,338	\$7,232,630	\$39,988,474
2027	\$1,698,594	\$8,421,024	\$5,501,491	\$4,312,263	\$7,405,853	\$4,318,281	\$1,098,338	\$7,232,630	\$39,988,474
2028	\$1,698,594	\$8,421,024	\$5,501,491	\$4,312,263	\$7,405,853	\$4,318,281	\$1,098,338	\$7,232,630	\$39,988,474
2029	\$1,698,594	\$8,421,024	\$5,501,491	\$4,312,263	\$7,405,853	\$4,318,281	\$1,098,338	\$7,232,630	\$39,988,474
2030	\$1,698,594	\$8,421,024	\$5,501,491	\$4,312,263	\$7,405,853	\$4,318,281	\$1,098,338	\$7,232,630	\$39,988,474
2031	\$1,698,594	\$8,421,024	\$5,501,491	\$4,312,263	\$7,405,853	\$4,318,281	\$1,098,338	\$7,232,630	\$39,988,474
2032	\$1,698,594	\$8,421,024	\$5,501,491	\$4,312,263	\$7,405,853	\$4,318,281	\$1,098,338	\$7,232,630	\$39,988,474
2033	\$1,698,594	\$8,421,024	\$5,501,491	\$4,312,263	\$7,405,853	\$4,318,281	\$1,098,338	\$7,232,630	\$39,988,474
2034	\$1,698,594	\$8,421,024	\$5,501,491	\$4,312,263	\$7,405,853	\$4,318,281	\$1,098,338	\$7,232,630	\$39,988,474
Total	\$26,066,787	\$129,229,847	\$84,439,043	\$66,176,407	\$113,667,942	\$66,278,684	\$16,855,205	\$108,184,488	\$610,898,402

Note: All figures are in constant 2015 dollars.

Indirect sales tax revenues include sales taxes from direct employees and employees at supported local businesses. They are estimated by multiplying total personal income from the economic impact times 31 percent (share of taxable expenditures), times a residency ratio of 98 percent for the county, times the local sales tax rate.² No residency ratio is used for state indirect sales tax. Indirect sales taxes are estimated at about \$5.5 million per year to the school

² According to the Census Bureau Consumer Expenditure Survey, persons in the median income range spend about 31 percent of their income on taxable goods.

district, \$7.4 million to the county, and \$4.3 million to the state.³ All total the company would generate about \$264.4 million in indirect sales tax revenues to all jurisdictions combined over 20 years.

In terms of state modified business tax, indirect and induced employees could generate approximately \$108.2 million in new revenues over 20 years. For this calculation a rate of 1.475% is applied to indirect personal income from the economic impacts. Modified business tax from direct employees is already captured in direct revenues.

Value of Abatements and Reimbursements

In total, Faraday Future could generate an estimated \$767.1 million in direct and indirect tax revenues, net of abatements and reimbursements, to state and local governments in Nevada over 20 years. Table 6 shows the value of the sales, property tax and modified business tax (MBT) abatements and reimbursements provided by each jurisdiction. These total \$139.6 million at the local level and \$76.4 million at the state level over 20 years.

The summary shows the value of a 75 percent real and personal property tax abatement for 10 years as well as a state and local sales tax abatement on equipment purchases and construction materials for 15 years. There would also be a 75 percent MBT abatement for ten years. In addition, the state is offering Transferrable Tax Credits totaling \$38.0 million based on \$9,500 per job for the first 4,000 new jobs created by the company which will be issued beginning in July 2017 in amounts of up to \$7.6 million per year. The proposed package of abatements, reimbursements and tax credits offer to Faraday Future would total \$215.9 million.

**TABLE 6
ABATEMENTS AND REIMBURSEMENTS SUMMARY
PROJECT ROBIN**

Year	Property				Sales			MBT	Legislative TTC	Total	
	City	County	School District	State	County/Other Local	School District	State			Local	State
2015	\$86,957	\$46,359	\$92,378	\$12,049	\$21,000	\$15,600	\$12,000	\$21,815	\$0	\$262,294	\$45,864
2016	\$2,210,105	\$1,178,278	\$2,347,910	\$306,234	\$18,043,988	\$13,404,106	\$10,310,850	\$135,901	\$0	\$37,184,388	\$10,752,985
2017	\$3,383,608	\$1,803,911	\$3,594,583	\$468,835	\$12,196,012	\$9,059,894	\$6,969,150	\$458,404	\$2,850,000	\$30,038,008	\$10,746,388
2018	\$3,747,985	\$1,998,172	\$3,981,680	\$519,323	\$5,040,000	\$3,744,000	\$2,880,000	\$1,081,251	\$6,650,000	\$18,511,836	\$11,130,574
2019	\$3,540,848	\$1,887,740	\$3,761,628	\$490,622	\$126,000	\$93,600	\$72,000	\$1,678,290	\$7,600,000	\$9,409,815	\$9,840,912
2020	\$3,369,038	\$1,796,143	\$3,579,105	\$466,816	\$182,000	\$135,200	\$104,000	\$1,678,290	\$7,600,000	\$9,061,486	\$9,849,106
2021	\$3,224,515	\$1,719,093	\$3,425,571	\$446,791	\$217,000	\$161,200	\$124,000	\$1,832,423	\$7,600,000	\$8,747,379	\$10,003,213
2022	\$3,094,385	\$1,649,717	\$3,287,327	\$428,760	\$217,000	\$161,200	\$124,000	\$1,923,905	\$5,700,000	\$8,409,630	\$8,176,665
2023	\$2,987,783	\$1,592,883	\$3,174,078	\$413,989	\$217,000	\$161,200	\$124,000	\$2,061,663	\$0	\$8,132,943	\$2,599,652
2024	\$2,901,890	\$1,547,091	\$3,082,830	\$402,088	\$217,000	\$161,200	\$124,000	\$2,061,663	\$0	\$7,910,012	\$2,587,751
2025	\$0	\$0	\$0	\$0	\$217,000	\$161,200	\$124,000	\$0	\$0	\$378,200	\$124,000
2026	\$0	\$0	\$0	\$0	\$217,000	\$161,200	\$124,000	\$0	\$0	\$378,200	\$124,000
2027	\$0	\$0	\$0	\$0	\$217,000	\$161,200	\$124,000	\$0	\$0	\$378,200	\$124,000
2028	\$0	\$0	\$0	\$0	\$217,000	\$161,200	\$124,000	\$0	\$0	\$378,200	\$124,000
2029	\$0	\$0	\$0	\$0	\$217,000	\$161,200	\$124,000	\$0	\$0	\$378,200	\$124,000
2030	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2031	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2032	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2033	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2034	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$28,547,113	\$15,219,388	\$30,327,090	\$3,955,505	\$37,562,000	\$27,903,200	\$21,464,000	\$12,933,606	\$38,000,000	\$139,558,791	\$76,353,111

³ Reflects state sales tax rate of 2 percent.

Summary

The operations of the manufacturing facility described in this analysis would create significant economic benefits for Southern Nevada. The company would not only create new primary jobs and payroll in an export industry where most of the sales are outside Nevada, but would also create additional demand for other local businesses based on supplier purchases and employee spending. The number of direct jobs created by Faraday Future would increase manufacturing employment in the county by more than 20 percent, with an even greater percentage increase in advanced manufacturing employment.

The company would generate significant property, sales and MBT revenues to state and local governments in Nevada. It would also result in new employee housing and consumer spending that would generate sales and property taxes at the full unabated rate. Furthermore, it is likely that investing in attracting this size of manufacturer to Southern Nevada will seed additional related economic development activity locally and throughout the region.

APPENDIX

LOCAL AND NATIONAL ECONOMIC AND REVENUE IMPACTS

**TABLE A-1
ANNUAL OPERATIONS IMPACT OF PROJECT ROBIN
ON CLARK COUNTY USING LOCAL MULTIPLIERS**

Year	Direct			Indirect			Induced			Total		
	Output	Jobs	Personal Income	Output	Jobs	Personal Income	Output	Jobs	Personal Income	Output	Jobs	Personal Income
2015	\$40,650,068	50	\$2,399,980	\$6,354,134	34	\$2,259,814	\$2,864,692	22	\$912,757	\$49,868,894	106	\$5,572,551
2016	\$233,662,402	300	\$13,795,428	\$36,524,471	197	\$12,989,735	\$16,466,657	126	\$5,246,656	\$286,653,530	623	\$32,031,819
2017	\$779,276,163	1,000	\$46,008,464	\$121,810,995	656	\$43,321,437	\$54,917,150	422	\$17,497,867	\$956,004,308	2,078	\$106,827,768
2018	\$1,833,015,541	2,339	\$108,221,236	\$286,524,158	1,543	\$101,900,804	\$129,176,271	992	\$41,158,531	\$2,248,715,971	4,874	\$251,280,571
2019	\$2,843,092,995	3,668	\$167,856,208	\$444,412,395	2,394	\$158,052,921	\$200,358,450	1,538	\$63,838,810	\$3,487,863,840	7,600	\$389,747,939
2020	\$2,843,092,995	3,668	\$167,856,208	\$444,412,395	2,394	\$158,052,921	\$200,358,450	1,538	\$63,838,810	\$3,487,863,840	7,600	\$389,747,939
2021	\$3,103,855,465	4,000	\$183,251,624	\$485,172,959	2,613	\$172,549,200	\$218,734,902	1,679	\$69,693,971	\$3,807,763,326	8,292	\$425,494,795
2022	\$3,258,626,673	4,200	\$192,389,316	\$509,365,711	2,743	\$181,153,225	\$229,641,939	1,763	\$73,169,203	\$3,997,634,323	8,706	\$446,711,744
2023	\$3,491,686,839	4,500	\$206,149,188	\$545,796,045	2,940	\$194,109,481	\$246,066,155	1,889	\$78,402,336	\$4,283,549,038	9,328	\$478,661,005
2024	\$3,491,686,839	4,500	\$206,149,188	\$545,796,045	2,940	\$194,109,481	\$246,066,155	1,889	\$78,402,336	\$4,283,549,038	9,328	\$478,661,005
2025	\$3,491,686,839	4,500	\$206,149,188	\$545,796,045	2,940	\$194,109,481	\$246,066,155	1,889	\$78,402,336	\$4,283,549,038	9,328	\$478,661,005
2026	\$3,491,686,839	4,500	\$206,149,188	\$545,796,045	2,940	\$194,109,481	\$246,066,155	1,889	\$78,402,336	\$4,283,549,038	9,328	\$478,661,005
2027	\$3,491,686,839	4,500	\$206,149,188	\$545,796,045	2,940	\$194,109,481	\$246,066,155	1,889	\$78,402,336	\$4,283,549,038	9,328	\$478,661,005
2028	\$3,491,686,839	4,500	\$206,149,188	\$545,796,045	2,940	\$194,109,481	\$246,066,155	1,889	\$78,402,336	\$4,283,549,038	9,328	\$478,661,005
2029	\$3,491,686,839	4,500	\$206,149,188	\$545,796,045	2,940	\$194,109,481	\$246,066,155	1,889	\$78,402,336	\$4,283,549,038	9,328	\$478,661,005
2030	\$3,491,686,839	4,500	\$206,149,188	\$545,796,045	2,940	\$194,109,481	\$246,066,155	1,889	\$78,402,336	\$4,283,549,038	9,328	\$478,661,005
2031	\$3,491,686,839	4,500	\$206,149,188	\$545,796,045	2,940	\$194,109,481	\$246,066,155	1,889	\$78,402,336	\$4,283,549,038	9,328	\$478,661,005
2032	\$3,491,686,839	4,500	\$206,149,188	\$545,796,045	2,940	\$194,109,481	\$246,066,155	1,889	\$78,402,336	\$4,283,549,038	9,328	\$478,661,005
2033	\$3,491,686,839	4,500	\$206,149,188	\$545,796,045	2,940	\$194,109,481	\$246,066,155	1,889	\$78,402,336	\$4,283,549,038	9,328	\$478,661,005
2034	\$3,491,686,839	4,500	\$206,149,188	\$545,796,045	2,940	\$194,109,481	\$246,066,155	1,889	\$78,402,336	\$4,283,549,038	9,328	\$478,661,005
20 Yr Total	\$56,835,514,365	4,500	\$3,355,568,720	\$8,884,129,757	2,940	\$3,159,593,825	\$4,005,312,368	1,889	\$1,276,184,640	\$69,724,956,491	9,328	\$7,791,347,184

**TABLE A-2
ANNUAL OPERATIONS IMPACT OF PROJECT ROBIN
USING NATIONAL MULTIPLIERS**

Year	Direct			Indirect			Induced			Total		
	Output	Jobs	Personal Income	Output	Jobs	Personal Income	Output	Jobs	Personal Income	Output	Jobs	Personal Income
2015	\$40,650,068	50	\$2,399,980	\$53,223,024	179	\$11,458,356	\$21,798,412	141	\$5,840,457	\$115,671,504	370	\$19,698,793
2016	\$233,662,402	300	\$13,795,428	\$305,933,545	1,028	\$65,864,266	\$125,300,387	813	\$33,571,784	\$664,896,334	2,141	\$113,231,478
2017	\$779,276,163	1,000	\$46,008,464	\$1,020,304,154	3,429	\$219,660,724	\$417,883,254	2,710	\$111,963,632	\$2,217,463,571	7,139	\$377,632,820
2018	\$1,833,015,541	2,339	\$108,221,236	\$2,399,962,248	8,065	\$516,686,561	\$982,946,142	6,375	\$263,361,163	\$5,215,923,931	16,780	\$888,268,960
2019	\$2,843,092,995	3,668	\$167,856,208	\$3,722,453,903	12,510	\$801,405,067	\$1,524,595,525	9,889	\$408,485,504	\$8,090,142,422	26,066	\$1,377,746,779
2020	\$2,843,092,995	3,668	\$167,856,208	\$3,722,453,903	12,510	\$801,405,067	\$1,524,595,525	9,889	\$408,485,504	\$8,090,142,422	26,066	\$1,377,746,779
2021	\$3,103,855,465	4,000	\$183,251,624	\$4,063,869,493	13,657	\$874,908,243	\$1,664,428,198	10,795	\$445,950,930	\$8,832,153,156	28,453	\$1,504,110,797
2022	\$3,258,626,673	4,200	\$192,389,316	\$4,266,511,014	14,338	\$918,534,825	\$1,747,423,546	11,334	\$468,187,908	\$9,272,561,233	29,872	\$1,579,112,049
2023	\$3,491,686,839	4,500	\$206,149,188	\$4,571,656,053	15,364	\$984,229,334	\$1,872,400,987	12,144	\$501,673,165	\$9,935,743,879	32,008	\$1,692,051,687
2024	\$3,491,686,839	4,500	\$206,149,188	\$4,571,656,053	15,364	\$984,229,334	\$1,872,400,987	12,144	\$501,673,165	\$9,935,743,879	32,008	\$1,692,051,687
2025	\$3,491,686,839	4,500	\$206,149,188	\$4,571,656,053	15,364	\$984,229,334	\$1,872,400,987	12,144	\$501,673,165	\$9,935,743,879	32,008	\$1,692,051,687
2026	\$3,491,686,839	4,500	\$206,149,188	\$4,571,656,053	15,364	\$984,229,334	\$1,872,400,987	12,144	\$501,673,165	\$9,935,743,879	32,008	\$1,692,051,687
2027	\$3,491,686,839	4,500	\$206,149,188	\$4,571,656,053	15,364	\$984,229,334	\$1,872,400,987	12,144	\$501,673,165	\$9,935,743,879	32,008	\$1,692,051,687
2028	\$3,491,686,839	4,500	\$206,149,188	\$4,571,656,053	15,364	\$984,229,334	\$1,872,400,987	12,144	\$501,673,165	\$9,935,743,879	32,008	\$1,692,051,687
2029	\$3,491,686,839	4,500	\$206,149,188	\$4,571,656,053	15,364	\$984,229,334	\$1,872,400,987	12,144	\$501,673,165	\$9,935,743,879	32,008	\$1,692,051,687
2030	\$3,491,686,839	4,500	\$206,149,188	\$4,571,656,053	15,364	\$984,229,334	\$1,872,400,987	12,144	\$501,673,165	\$9,935,743,879	32,008	\$1,692,051,687
2031	\$3,491,686,839	4,500	\$206,149,188	\$4,571,656,053	15,364	\$984,229,334	\$1,872,400,987	12,144	\$501,673,165	\$9,935,743,879	32,008	\$1,692,051,687
2032	\$3,491,686,839	4,500	\$206,149,188	\$4,571,656,053	15,364	\$984,229,334	\$1,872,400,987	12,144	\$501,673,165	\$9,935,743,879	32,008	\$1,692,051,687
2033	\$3,491,686,839	4,500	\$206,149,188	\$4,571,656,053	15,364	\$984,229,334	\$1,872,400,987	12,144	\$501,673,165	\$9,935,743,879	32,008	\$1,692,051,687
2034	\$3,491,686,839	4,500	\$206,149,188	\$4,571,656,053	15,364	\$984,229,334	\$1,872,400,987	12,144	\$501,673,165	\$9,935,743,879	32,008	\$1,692,051,687
20 Yr Total	\$56,835,514,365	4,500	\$3,355,568,720	\$74,414,583,922	15,364	\$16,020,675,117	\$30,477,782,829	12,144	\$8,165,924,858	\$161,727,881,117	32,008	\$27,542,168,695

**TABLE A-3
INDIRECT REVENUE IMPACT OF PROJECT ROBIN
BASED ON LOCAL MULTIPLIERS**

Year	City	School		County and Other Local Govts			State		Total Indirect Revenues
	Property	Property		Property		Property			
	Tax	Tax	Sales Tax	Tax	Sales Tax	Sales Tax	Tax	MBT	
2015	\$13,287	\$65,874	\$44,016	\$33,058	\$59,253	\$34,550	\$8,592	\$46,795	\$305,426
2016	\$77,953	\$386,465	\$253,013	\$193,944	\$340,594	\$198,597	\$50,406	\$268,987	\$1,769,959
2017	\$259,914	\$1,288,559	\$843,811	\$646,652	\$1,135,900	\$662,332	\$168,064	\$897,085	\$5,902,318
2018	\$609,718	\$3,022,765	\$1,984,815	\$1,516,948	\$2,671,866	\$1,557,940	\$394,253	\$2,110,125	\$13,868,430
2019	\$950,718	\$4,713,321	\$3,078,541	\$2,365,339	\$4,144,190	\$2,416,437	\$614,750	\$3,272,903	\$21,556,199
2020	\$950,718	\$4,713,321	\$3,078,541	\$2,365,339	\$4,144,190	\$2,416,437	\$614,750	\$3,272,903	\$21,556,199
2021	\$1,037,363	\$5,142,875	\$3,360,898	\$2,580,907	\$4,524,286	\$2,638,068	\$670,775	\$3,573,087	\$23,528,258
2022	\$1,089,158	\$5,399,657	\$3,528,487	\$2,709,771	\$4,749,886	\$2,769,613	\$704,267	\$3,751,256	\$24,702,094
2023	\$1,167,007	\$5,785,605	\$3,780,848	\$2,903,456	\$5,089,602	\$2,967,698	\$754,605	\$4,019,549	\$26,468,370
2024	\$1,167,007	\$5,785,605	\$3,780,848	\$2,903,456	\$5,089,602	\$2,967,698	\$754,605	\$4,019,549	\$26,468,370
2025	\$1,167,007	\$5,785,605	\$3,780,848	\$2,903,456	\$5,089,602	\$2,967,698	\$754,605	\$4,019,549	\$26,468,370
2026	\$1,167,007	\$5,785,605	\$3,780,848	\$2,903,456	\$5,089,602	\$2,967,698	\$754,605	\$4,019,549	\$26,468,370
2027	\$1,167,007	\$5,785,605	\$3,780,848	\$2,903,456	\$5,089,602	\$2,967,698	\$754,605	\$4,019,549	\$26,468,370
2028	\$1,167,007	\$5,785,605	\$3,780,848	\$2,903,456	\$5,089,602	\$2,967,698	\$754,605	\$4,019,549	\$26,468,370
2029	\$1,167,007	\$5,785,605	\$3,780,848	\$2,903,456	\$5,089,602	\$2,967,698	\$754,605	\$4,019,549	\$26,468,370
2030	\$1,167,007	\$5,785,605	\$3,780,848	\$2,903,456	\$5,089,602	\$2,967,698	\$754,605	\$4,019,549	\$26,468,370
2031	\$1,167,007	\$5,785,605	\$3,780,848	\$2,903,456	\$5,089,602	\$2,967,698	\$754,605	\$4,019,549	\$26,468,370
2032	\$1,167,007	\$5,785,605	\$3,780,848	\$2,903,456	\$5,089,602	\$2,967,698	\$754,605	\$4,019,549	\$26,468,370
2033	\$1,167,007	\$5,785,605	\$3,780,848	\$2,903,456	\$5,089,602	\$2,967,698	\$754,605	\$4,019,549	\$26,468,370
2034	\$1,167,007	\$5,785,605	\$3,780,848	\$2,903,456	\$5,089,602	\$2,967,698	\$754,605	\$4,019,549	\$26,468,370
Total	\$18,992,911	\$94,160,092	\$61,542,293	\$47,253,426	\$82,845,395	\$48,306,353	\$12,281,123	\$65,427,732	\$430,809,325

Note: All figures are in constant 2015 dollars.

**TABLE A-4
INDIRECT REVENUE IMPACT OF PROJECT ROBIN
BASED ON NATIONAL MULTIPLIERS**

Year	City	School		County and Other Local Govts		State			Total Indirect Revenues
	Property Tax	Property Tax	Sales Tax	Property Tax	Sales Tax	Sales Tax	Property Tax	MBT	
2015	\$46,319	\$229,632	\$155,597	\$115,239	\$209,457	\$122,133	\$29,950	\$255,157	\$1,163,484
2016	\$267,822	\$1,327,768	\$894,393	\$666,329	\$1,203,990	\$702,035	\$173,178	\$1,466,682	\$6,702,198
2017	\$893,137	\$4,427,856	\$2,982,846	\$2,222,081	\$4,015,370	\$2,341,323	\$577,517	\$4,891,459	\$22,351,590
2018	\$2,099,188	\$10,407,027	\$7,016,259	\$5,222,676	\$9,444,964	\$5,507,268	\$1,357,369	\$11,505,704	\$52,560,455
2019	\$3,260,956	\$16,166,658	\$10,882,546	\$8,113,097	\$14,649,582	\$8,542,030	\$2,108,587	\$17,845,886	\$81,569,342
2020	\$3,260,956	\$16,166,658	\$10,882,546	\$8,113,097	\$14,649,582	\$8,542,030	\$2,108,587	\$17,845,886	\$81,569,342
2021	\$3,559,491	\$17,646,688	\$11,880,670	\$8,855,837	\$15,993,210	\$9,325,487	\$2,301,624	\$19,482,673	\$89,045,680
2022	\$3,737,050	\$18,526,962	\$12,473,090	\$9,297,596	\$16,790,698	\$9,790,495	\$2,416,437	\$20,454,160	\$93,486,488
2023	\$4,004,279	\$19,851,788	\$13,365,178	\$9,962,448	\$17,991,586	\$10,490,720	\$2,589,231	\$21,917,062	\$100,172,292
2024	\$4,004,279	\$19,851,788	\$13,365,178	\$9,962,448	\$17,991,586	\$10,490,720	\$2,589,231	\$21,917,062	\$100,172,292
2025	\$4,004,279	\$19,851,788	\$13,365,178	\$9,962,448	\$17,991,586	\$10,490,720	\$2,589,231	\$21,917,062	\$100,172,292
2026	\$4,004,279	\$19,851,788	\$13,365,178	\$9,962,448	\$17,991,586	\$10,490,720	\$2,589,231	\$21,917,062	\$100,172,292
2027	\$4,004,279	\$19,851,788	\$13,365,178	\$9,962,448	\$17,991,586	\$10,490,720	\$2,589,231	\$21,917,062	\$100,172,292
2028	\$4,004,279	\$19,851,788	\$13,365,178	\$9,962,448	\$17,991,586	\$10,490,720	\$2,589,231	\$21,917,062	\$100,172,292
2029	\$4,004,279	\$19,851,788	\$13,365,178	\$9,962,448	\$17,991,586	\$10,490,720	\$2,589,231	\$21,917,062	\$100,172,292
2030	\$4,004,279	\$19,851,788	\$13,365,178	\$9,962,448	\$17,991,586	\$10,490,720	\$2,589,231	\$21,917,062	\$100,172,292
2031	\$4,004,279	\$19,851,788	\$13,365,178	\$9,962,448	\$17,991,586	\$10,490,720	\$2,589,231	\$21,917,062	\$100,172,292
2032	\$4,004,279	\$19,851,788	\$13,365,178	\$9,962,448	\$17,991,586	\$10,490,720	\$2,589,231	\$21,917,062	\$100,172,292
2033	\$4,004,279	\$19,851,788	\$13,365,178	\$9,962,448	\$17,991,586	\$10,490,720	\$2,589,231	\$21,917,062	\$100,172,292
2034	\$4,004,279	\$19,851,788	\$13,365,178	\$9,962,448	\$17,991,586	\$10,490,720	\$2,589,231	\$21,917,062	\$100,172,292
Total	\$65,176,264	\$323,120,708	\$217,550,082	\$162,155,328	\$292,855,880	\$170,761,446	\$42,144,024	\$356,752,350	\$1,630,516,081

Note: All figures are in constant 2015 dollars.



December 10, 2015

Observations on Faraday Future: Economic Impacts on Nevada

The purpose of this letter is to provide for the legislature an opinion for discussion purposes on the proposed Faraday Future production facility and its economic impacts.

In discussing the potential economic impacts of Faraday Future on Nevada, there are several observations that are analogous to the policy discussion that took place on the proposed major Tesla facilities. Thus, in the context of the proposed Faraday Future facilities, the legislature faces several similar issues which are outlined below. I have discussed several of the issues presented below with the legislature in the past legislative session.

However, in my opinion, there are two areas with Faraday Future which need to be specifically discussed by Nevada policymakers in more detail. Each of these two areas will then be discussed in turn below.

The proposed Faraday Future operation is a large manufacturing facility that represents not an intermediate product but rather final demand manufacturing of an electric vehicle. Thus, it needs to be recognized that manufacturing facilities tend to have higher multipliers on state growth than other industries (The Manufacturing Institute, 2009). Multipliers are numerical summaries of a complex process of production and consumption interactions given new economic activity within a state. Their size is dependent upon the state's industrial diversification, maturity, and technology across suppliers, its industrial and service complexity, consumption patterns, and qualified workforce.

As I have discussed with the legislature on prior occasions, it is critical to note that "large" multipliers appear to occur for successful large-scale manufacturing facilities over time as they become more integrated into the state economy.

If Faraday Future represents a new disruptive technology that is expected to grow in importance over time, then such a multiplier relationship may well be expected here in Nevada. This is particularly true if Faraday Future can act as a technological anchor for the Apex Industrial Park.

An important example to consider is the partnership between BMW and South Carolina. In this regard the BMW multiplier grew over time into a larger multiplier in South Carolina as compared to similar facilities (Woodward, Moore School of Business, 2008). Specifically, the employment multiplier effect defined as the ratio of total state employment supported by direct employment at the factory is approximately 4.3. A typical employment multiplier for South Carolina industries or services is closer to approximately 2.0 (Woodward, Moore School of

Business, 2008). To summarize this in a simple sense, BMW turned out to be an important “game changer” for the state economy.

Similar to the case of Tesla, estimating “total” economic impacts for Faraday Future are further complicated by the (potentially positive) transfer of their technology to other sectors which could augment additional new growth. Traditional impacts models are simply not well suited to capture either additional technology transfers or demonstration effects of a leading sustainable enterprise. It certainly appears that these “extra” factors occurred with the BMW facilities in South Carolina in increasing the employment multiplier.

As the legislature is aware, we can all agree that in the real-world large scale facilities matter a lot but as a general statement there is a tendency in traditional impact models to scale up and down with fixed (i.e. constant) coefficients. This is not reasonable for new disruptive technologies which may then lead to further new technical developments. Using an example that I have shared previously with the legislature, (smartphone) cell phones were a major advancement in personal communication but the true technology explosion in growth due to applications (apps) was not fully anticipated in impact models. As is well-known, impact models are generally based upon what is already in place (for a comparison of the most-commonly utilized models, see Lynch, 2000). Thus, these base estimates can often show “flat” growth.

As a parallel to consider, this is likely why the actual gains associated with BMW began to double traditional estimates. BMW was a game changer in scale, technology, and substitution and service demand that was not well approximated by pre-BMW existing industry structure in South Carolina. The 5,400 direct jobs at BMW have been estimated to be associated with 23,050 total jobs in South Carolina (Figure 3, Woodward, op. cit.).

As noted above, there are two observations in my opinion that need specific attention by the legislature with respect to Faraday Future.

First, Faraday Future is, in my opinion, a startup automotive manufacturing enterprise even if at a very large scale. Thus, carefully matching state incentives with recognizable enterprise accomplishments will need thorough legislative discussion and formulation.

Second, how can the legislature secure the cooperation of other state institutions like NSHE to get on board to assist in the success of a major facility in engineering and manufacturing? A skilled workforce for a high-tech automotive facility with potential technology spinoffs elsewhere in the state economy will be critical. This brings issues of workforce training for high-tech manufacturing and related economic development to the forefront for both current development and future development throughout Nevada.

It also needs to be recognized of course that further work in economic development is needed to encourage domestic supplier needs of Faraday Future to be met by local vendors to create a

clustering effect. This may well involve, in part, future Nevada recruitment efforts and the relocation of national suppliers to our state.

In closing, the conceptual details for Faraday Future that are available do in my opinion represent the type of long run economic development potential that is associated with high-tech manufacturing and, if so, an opportunity for Nevada to broaden its current vision of the state's future. The challenge of the legislature from the public policy perspective is to manage the public finance risk of such a massive startup and its integration with other state institutions.

Respectfully,

A handwritten signature in cursive script that reads "Alan Schlottmann". The signature is written in black ink on a white background.

Alan Schlottmann

Professor of Economics

Former Associate Editor, *Journal of Regional Science*

Former Editor, *Review of Regional Studies*

Citations:

Woodward, Douglas P. and Paulo Guimaraes, *BMW in South Carolina: The Economic Impact of a Leading Sustainable Enterprise*, Moore School of Business, University of South Carolina, September 2008.

The Manufacturing Institute, *Facts About Modern Manufacturing*, Eighth Edition, Washington, DC, 2009

Lynch, Tim, *Analyzing the Economic Impacts of Transportation Projects Using RIMS II, IMPLAN, and REMI*, US Department of Transportation, Office of Research and Special Programs, Washington, 2000.



**STATE OF NEVADA
DEPARTMENT OF TAXATION**

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Executive Director

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December 7, 2015

Mr. Steve Hill,
Executive Director
Nevada Governor's Office of Economic Development
555 E. Washington Avenue, Suite 5400
Las Vegas, NV 89101

Dear Mr. Hill:

At the request of your office I have been using the Regional Economic Models, Inc. (REMI) model to examine the potential economic impact of the Faraday Future automotive factory should they locate in Clark County. I am submitting to you these general comments to assist you in your testimony to the Nevada Legislature.

In my office I have two different versions of the REMI model. One version provides county level analysis of broad industry groups, like manufacturing, while the other includes statewide information about detailed subsectors like motor vehicle manufacturing. Using these two versions together provides a more complete understanding of the potential economic impact Faraday Future would have not only in Clark County, but also the entire state.

For example, if Faraday Future's planned jobs, payroll, and investments as a broadly defined manufacturer are added to Clark County's economy, REMI estimates the cumulative economic impact of the factory by 2034 to be \$58.7 billion with an increase of 10,993 jobs. This growth would naturally have ripple effects to other Nevada counties and generate an additional economic impact of \$139.1 million and 37 jobs to northern Nevada (Carson City, Douglas, Lyon, Storey, and Washoe counties), and \$357.9 million in economic impact and 62 jobs to the remaining Nevada counties (See Table 1).

Table 1: REMI Estimated Regional Economic Impact of Faraday Future

	Clark County	Northern Nevada Counties	Balance of State	Total
Cumulative Output in Millions of Current Dollars (2015-2034)	\$58,671.624	\$139.128	\$357.918	\$59,168.670
Jobs at Build-out	10,993	37	62	11,092

Additionally, and because of the dynamic nature of REMI, we can model the aggregate impacts when Tesla is added to Storey County in the sub-state model. When that is considered, the total economic impact to Clark County grows to \$64 billion and 14,915 jobs (See Table 2).

Table 2: REMI Estimated Economic Impact of Faraday Future with and without Tesla on Clark County

	Faraday Future Only	Faraday Future and Tesla
Cumulative Output in Millions of Current Dollars (2015-2034)	\$58,671.624	\$64,011.222
Jobs at Build-out	10,993	14,915

Finally, if we add Faraday Future's planned jobs, payroll, and investments as a more narrowly defined auto manufacturer into REMI's industry detail model, much larger economic impacts are projected to occur as these industries mature. In this analysis, Nevada would recognize a cumulative economic impact of the factory by 2034 to be \$81.6 billion with an additional 11,397 jobs added to the state's economy (See Table 3).

Table 3: Comparison Economic Impact of Faraday Future on Nevada as a Manufacturer and an Auto Manufacturer

	Manufacturer	Auto Manufacturer
Cumulative Output in Millions of Current Dollars (2015-2034)	\$59,168.670	\$81,563.790
Jobs at Build-out	11,092	11,397

In summary, Faraday Future would have a significant positive impact on the economy of southern Nevada and Nevada as a whole. Industry specific limitations of the regional model yield more conservative estimates than if the company were classified specifically as an auto manufacturer. Therefore, one could reasonably assume that if industry specificity were available in the county model, economic impact estimates for Clark County would be even higher than those outlined in Table 1.

Please feel free to let me know if you need additional information.

Sincerely,



Jeff Hardcastle, AICP
Nevada State Demographer