2017 NISSAN LEAF

Overview and cost calculation (GPCOG, 3/9/2017)

Range: 107 miles (EPA approved range, the range depends on driving style and outdoor temperature)
Motor: 80 kW AC synchronous electric motor
Battery: 30 kWh lithium-ion (Li-ion)
Overall fuel economy: 106 MPG-e (3.16 mi/kWh)
Charging time: 25amps/240V - Level II Charger: 4.7 hours, DC Fastcharger: 30 min.
Warranty: 3 yr/36,000 miles basic, 5 yr/60,000 miles powertrain

2017 Nissan Leaf SV

Compared vehicle: Used Police Utility Vehicle: MPG 14/18

Scenario 1

Assumptions:
Gas Cost ($ per gallon) **$1.86**
Electricity Cost (¢ per kWh) **12.65**
Nissan Leaf: 27/33 kWh/100 miles
Used Police Vehicle: 14/18 MPG
Highway Driving: 50%
City/Urban Driving 50%
Other trips: No

Total Miles Driven annually	A.) 5,000 miles annually		B.) 10,000 miles annually		C.) 15,000 miles annually	
Vehicle Type	**2017 Nissan Leaf SV**	**Used Police Utility Vehicle**	**2017 Nissan Leaf SV**	**Used Police Utility Vehicle**	**2017 Nissan Leaf SV**	**Used Police Utility Vehicle**
Gas Cost	$0	$580	$0	$1,161	$0	$1,741
Electricity Cost	$192	$0	$383	$0	$575	$0
Maintenance & Repair	$371	$1,389	$371	$2,163	$371	$2,936
Annual Lease Payments	$0	$0	$0	$0	$0	$0
Insurance and Additional costs	$1,200	$1,200	$1,400	$1,400	$1,600	$1,600
Total Annual Cost	**$1,762**	**$3,169**	**$2,154**	**$4,724**	**$2,545**	**$6,277**
Gas used per year (gal)	0	312	0	624	0	936
Electricity used per year (kWh)	1514	0	3028	0	4543	0
Tailpipe C02 (in tons)	0	2.7	0	5.4	0	8.1
Upstream C02 (in tons)	0.3	0.7	0.6	1.4	0.9	2.1
Total C02 Emissions (in tons)	**0.3**	**3.4**	**0.6**	**6.8**	**0.9**	**10.2**
Equivalent in trees	**10**	**89**	**20**	**178**	**30**	**267**

Scenario 2

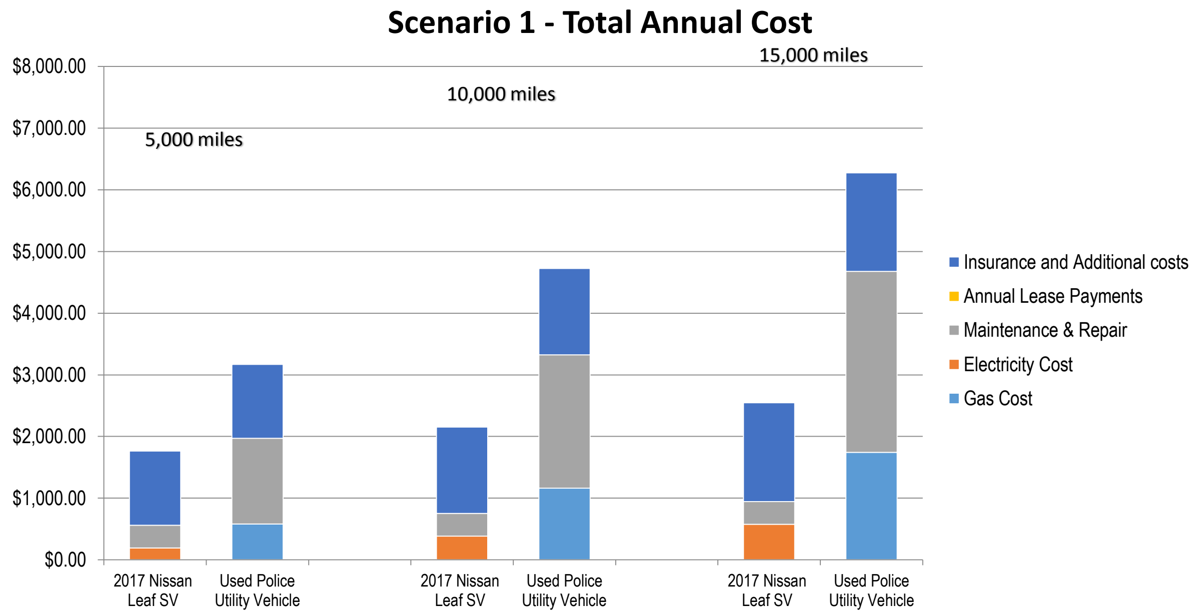
Assumptions:
Gas Cost ($ per gallon) **$2.86**
Electricity Cost (¢ per kWh) **12.65**
Nissan Leaf: 27/33 kWh/100 miles
Used Police Vehicle: 14/18 MPG
Highway Driving: 50%
City/Urban Driving 50%
Other trips: No

Total Miles Driven annually	A.) 5,000 miles annually		B.) 10,000 miles annually		C.) 15,000 miles annually	
Vehicle Type	**2017 Nissan Leaf SV**	**Used Police Utility Vehicle**	**2017 Nissan Leaf SV**	**Used Police Utility Vehicle**	**2017 Nissan Leaf SV**	**Used Police Utility Vehicle**
Gas Cost	$0	$892	$0	$1,785	$0	$2,677
Electricity Cost	$192	$0	$383	$0	$575	$0
Maintenance & Repair	$371	$1,389	$371	$2,163	$371	$2,936
Annual Lease Payments	$0	$0	$0	$0	$0	$0
Insurance and other costs	$1,200	$1,200	$1,400	$1,400	$1,600	$1,600
Total Annual Cost	**$1,762**	**$3,481**	**$2,154**	**$5,348**	**$2,545**	**$7,213**
Gas used per year (gal)	0	312	0	624	0	936
Electricity used per year (kWh)	1514	0	3028	0	4543	0
Tailpipe C02 (in tons)	0	2.7	0	5.4	0	8.1
Upstream C02 (in tons)	0.3	0.7	0.6	1.4	0.9	2.1
Total C02 Emissions (in tons)	**0.3**	**3.4**	**0.6**	**6.8**	**0.9**	**10.2**
Equivalent in trees	**10**	**89**	**20**	**178**	**30**	**267**

Scenario 3

Assumptions:
Gas Cost ($ per gallon) **$3.50**
Electricity Cost (¢ per kWh) **12.65**
Nissan Leaf: 27/33 kWh/100 miles
Used Police Vehicle: 14/18 MPG
Highway Driving: 50%
City/Urban Driving 50%
Other trips: No

Total Miles Driven annually	A.) 5,000 miles annually		B.) 10,000 miles annually		C.) 15,000 miles annually	
Vehicle Type	**2017 Nissan Leaf SV**	**Used Police Utility Vehicle**	**2017 Nissan Leaf SV**	**Used Police Utility Vehicle**	**2017 Nissan Leaf SV**	**Used Police Utility Vehicle**
Gas Cost	$0	$1,092	$0	$2,184	$0	$3,276
Electricity Cost	$192	$0	$383	$0	$575	$0
Maintenance & Repair	$371	$1,389	$371	$2,163	$371	$2,936
Annual Lease Payments	$0	$0	$0	$0	$0	$0
Insurance and other costs	$1,200	$1,200	$1,400	$1,400	$1,600	$1,600
Total Annual Cost	**$1,762**	**$3,681**	**$2,154**	**$5,747**	**$2,545**	**$7,812**
Gas used per year (gal)	0	312	0	624	0	936
Electricity used per year (kWh)	1514	0	3028	0	4543	0
Tailpipe C02 (in tons)	0	2.7	0	5.4	0	8.1
Upstream C02 (in tons)	0.3	0.7	0.6	1.4	0.9	2.1
Total C02 Emissions (in tons)	**0.3**	**3.4**	**0.6**	**6.8**	**0.9**	**10.2**
Equivalent in trees	**10**	**89**	**20**	**178**	**30**	**267**


Scenario 1 - Total Annual Cost
$8,000.00
$7,000.00
$6,000.00
$5,000.00
$4,000.00
$3,000.00
$2,000.00
$1,000.00
$0.00
5,000 miles
10,000 miles
15,000 miles
2017 Nissan Leaf SV
Used Police Utility Vehicle
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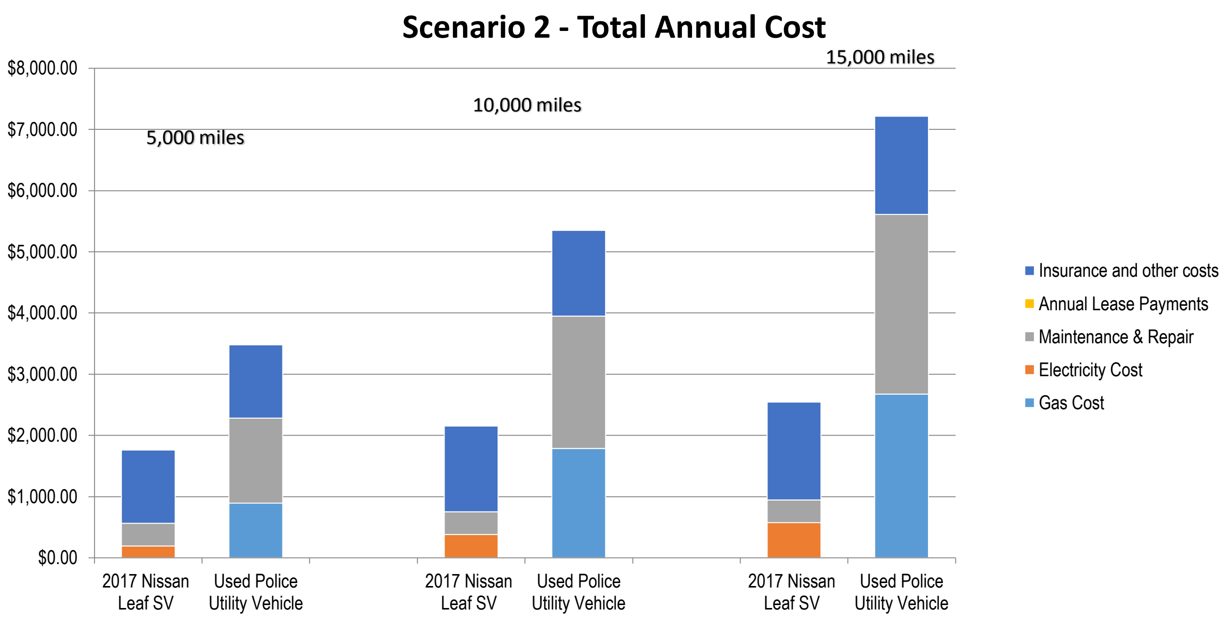
Used Police Utility Vehicle
2017 Nissan Leaf SV
Used Police Utility Vehicle
Insurance and Additional costs
Annual Lease Payments
Maintenance & Repair
Electricity Cost
Gas Cost


Scenario 2 - Total Annual Cost
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$7,000.00
$6,000.00
$5,000.00
$4,000.00
$3,000.00
$2,000.00
$1,000.00
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5,000 miles
10,000 miles
15,000 miles
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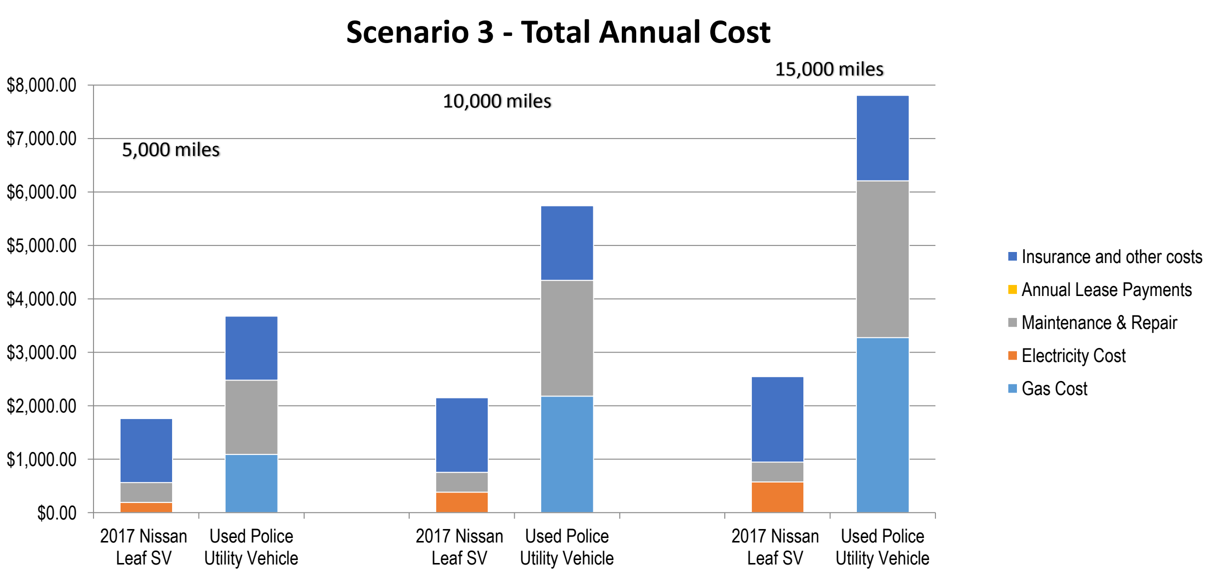
Scenario 3 - Total Annual Cost
$8,000.00
$7,000.00
$6,000.00
$5,000.00
$4,000.00
$3,000.00
$2,000.00
$1,000.00
$0.00
5,000 miles
10,000 miles
15,000 miles
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Used Police Utility Vehicle
Insurance and other costs
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Maintenance & Repair
Electricity Cost
Gas Cost

Predicted reliability - NISSAN LEAF

Initial Quality - Overall	●●●○○	3
Overall Quality - Mechanical	●●●○○	3
Powertrain Quality - Mechanical	●●●●●	5
Features and Accessories - Mechanical	●●●◐○	3.5
Body & Interior Quality - Mechanical	●●◐○○	2.5
Overall Quality - Design	●●●○○	3
Features and Accessories - Design	●●●○○	3
Powertrain Quality - Design	●●●●◐	4.5
Body & Interior - Design	●●◐○○	2.5

Ratings are based on J.D. Power's Initial Quality Study for the 2017 Nissan Leaf.

Conclusion:

The New England electricity grid is one of the cleanest in the country which is making Maine and New England one of the best regions to drive an EV from a clean fuel perspective. Leasing 2017 Nissan Leaf SV brings significant environmental benefits compared to a used conventional gas vehicle. In some cases it is also more economically viable. The total annual CO2 emissions for Nissan Leaf are on average 8 - 9 times lower than those produced by the compared convetional gas vehicle. The main limitation for Nissan Leaf is its range. This vehicle is suitable for multiple short distance trips.

Additional Information & Notes:

- Estimates for maintenance costs are based on engine type, class of car and driving habits.
- Cost equivalent MPG converts electrical energy usage of EVs to its equivalent in gasoline based on cost.
- Tailpipe CO_2 includes emissions for gasoline calculated at 8.8 kg CO_2/gal.
- Upstream CO_2 for gasoline is calculated at 2.21 kg CO_2/gal
- CO_2 absorption is assumed as 38.6 kg per tree
- Source of data : U.S. Department of Energy - Vehicle Cost Calculator, http://www.afdc.energy.gov/calc/ and Befrugal https://www.befrugal.com/tools/electric-car-calculator/